

Instituto Juan March

Centro de Estudios Avanzados en Ciencias Sociales (CEACS)

Juan March Institute

Center for Advanced Study in the Social Sciences (CEACS)

**Trade openness and preferences for redistribution : can we support the
compensation hypothesis?**

Author(s): Balcells Ventura, Laia

Date 2004

Type Working Paper

Series Estudios = Working papers / Instituto Juan March de Estudios e Investigaciones,
Centro de Estudios Avanzados en Ciencias Sociales 2004/209

City: Madrid

Publisher: Centro de Estudios Avanzados en Ciencias Sociales

Your use of the CEACS Repository indicates your acceptance of individual author and/or other copyright owners. Users may download and/or print one copy of any document(s) only for academic research and teaching purposes.

**Trade Openness and Preferences for Redistribution.
Can we support the compensation hypothesis?**

Laia Balcells Ventura

Estudio/Working Paper 2004/209
December 2004

Laia Balcells is a PhD candidate at the Center for Advanced Study in the Social Sciences,
Juan March Institute, Madrid.

Abstract

Compensation hypothesis, which has established a link between trade openness of countries and levels of government spending, has been widely accepted in the literature on trade policy and international globalization. However, the nature of the distribution effects produced by trade is likely to determine the existence of more or less redistribution demands from the median voter, and therefore government growth. In this paper we hypothesize that the effects of trade openness on redistribution demands are not homogeneous between countries, and following Fernández-Albertos (2002) we argue that they depend both on the type-of-factor endowment of the economy and the size of the sectors more likely to be affected by trade. We test this hypothesis with ISSP data for 23 countries, both with a country level and an individual level analysis. Our results show that redistribution demands (issued from trade openness) of the median voter of a country are largely dependant on GDP per capita and size of potential loser sectors such as manufacturing: while trade has a negative effect on pro-redistribution preferences in “poor” and/or in “low manufacturing” countries; it positively affects pro-redistribution preferences in “rich” and/or in “high manufacturing” countries. Additionally, we empirically demonstrate that the size of the loser sector plays a more important mediating role than the type-of-factor endowment of the economy. Lastly, we test for the effect that individual factor income has on preferences for redistribution issued from trade, and we observe that while individual skills -related to type of skill endowment of the economy- condition redistribution demands of individuals, sector of occupation –related to the sector relevance within the economy- does not.

1. Introduction¹

In this paper we establish a link between trade openness and preferences for redistribution of the individuals. We do it mainly with the intention to put more light on the validity of compensation hypothesis, which has been largely debated within the trade policy literature. Indeed, we want to understand whether (in democratic systems) trade openness is always accompanied with public sector growth, as has been stated by some authors (Adserà and Boix 2002); if it does not, as has been stated by others (Rodrik 1998); or if this relationship has to be tinged by the effect of domestic variables (Fernández-Albertos 2002)².

It is in order to provide a new theoretical viewpoint -and somewhat original empirical evidence into this debate- that we focus in the sphere of individual preferences for redistribution of income (redistribution preferences³). Indeed, as long as trade openness has negative effects on the distribution of income of a country, the distribution of preferences for redistribution should vary together with levels of trade. Likewise, as long as certain aspects of the domestic economy have a mediating effect on the relationship between trade and openness, at same levels of trade, the distribution of preferences for redistribution of a country should also change accordingly to the direction predicted by these effects.

Thus, our study is linking processes that are taking place at the macro-level (trade openness) with processes at the micro-level (changes in individual preferences). We recognize that this is a methodological risky enterprise, but we also think that this permits to obtain space for more research and to add interesting insights into the ongoing debate. In this paper, in order to undertake the most rigorous empirical analysis, we will take in account compositional effects of the distribution of preferences in different countries (this is why we make a two-level analysis, additional to a country-level analysis). It is for this that we consider some of the findings of the literature on preferences for redistribution, to which we will also provide new insights.

¹ I am grateful to José María Maravall, José Fernández-Albertos, Carles Boix, Marta Fraile, Ignacio Sánchez-Cuenca and Elna Roig for their comments and suggestions. Any remaining error is all my responsibility.

² Mainly, we will call into question the compensation hypothesis, and we will argue that needs to be revisited.

³ In this paper we will refer to “redistribution preferences” and “redistribution demands” almost undistinguishably; taking in account, though, that the latter refer only to pro-redistribution preferences.

This paper is structured as follows: In Part 1, we present a brief literature review on our object of study, we present our theoretical questions and we revise the theoretical framework within which they are located. In Part 2, we present our working hypotheses and we test them in an extensive empirical analysis. In Part 3, we discuss our results and present some possible implications of our findings. Part 4 concludes the article.

2. Theoretical Framework

2.1. Compensation hypothesis

From Katzenstein's book (1985), compensation hypothesis has arisen as a fundamental axis for the analysis of trade policy. Katzenstein says that small European states such as Sweden, Austria and the Netherlands complemented their international liberalization with strategic domestic compensation aimed at counter its harmful effects (i.e. instabilities in investment and employment)⁴. Policies of compensation had included support of employment, special tax legislation favouring enterprises that were affected by fluctuations in the business cycle, wage control (in these countries, by centralized bargaining), and public expenditures. Indeed, public sector increased along with internationalization in these states, and this was due to an increase in transfer payments, rather than government consumption itself. Additionally, the latter was accompanied by increasing tax burdens. "It was only in the 1950s and 1960s- that is, during the time of the international liberalization- that the public sector assumed such a prominent role in the small European states" (Katzenstein 1985: 55).

This aspect of what Katzenstein seen for the small European economies, has been later also taken in for other states. "In exploring the consequences that the international economy has on the domestic political arena, a growing literature has shown in the last two decades that higher levels of trade systematically lead to a larger public sector among both developed and developing nations" (Boix 2003:173). Compensation hypothesis, which emphasizes that domestic dislocations generated by globalization bring incentives for government interventions in the economy (Garret 2000:4), has arisen as the most relevant explanation for an observed relationship between trade liberalization and

⁴ Katzenstein considers globalization as an exogenous fact. He says that these countries had strong preferences for opening their borders, due to their weak position in an internationalizing world. "Protectionism would not only invite retaliation but also increase the costs of the intermediate inputs of products manufactured for export, thus undermining the international competitiveness of these small economies" (44).

public sector growth. This hypothesis has been opposed to the so-called efficiency hypothesis, which highlights competitiveness pressures and threats of exit by mobile asset holders driven by internationalization, and would predict a decrease in the government size along with an increase in international liberalization.

Compensation hypothesis has been largely debated. Rodrik (1998a), for instance, says that there is a positive association between trade and size of government, but that this is undermined by international capital mobility (costs of capital mobility). Garret (2000) opposes him: he analyses the interactive effects of trade and capital mobility on government spending, and says that indeed there is a positive relationship between levels of trade and levels of government spending, but there is no effect of capital mobility. Adserà and Boix (2002) also observe a positive relationship between trade openness and size of public sector.

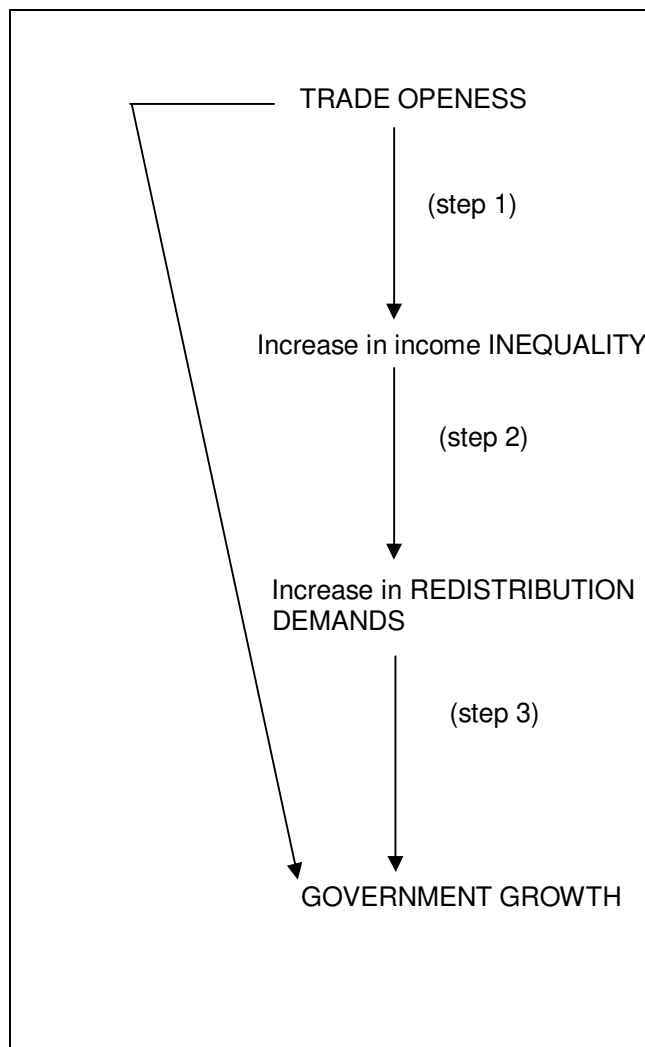
Compensation hypothesis implies that, in the short-term, globalization is expected to have two political effects that would increase citizen support for government spending: increasing economic *insecurity* and increasing *inequality* (Garret 2000: 6) On the one hand, higher levels of trade integration are seen as leading to growing risks associated with the international business cycle, which in turn put pressure on policy-makers to develop publicly-financed compensatory programs in favour of the exposed sectors (Katzenstein 1985, Rodrik 1998a). On the other hand, higher levels of trade integration are seen as leading to growing inequalities within society, and this puts pressure to the government on redistribution programs of compensation. Rodrik (1998b) has emphasized the former effect: he says that government spending plays a risk-reducing role in economies exposed to a significant amount of external risk. He observes not only that there is a positive and robust partial correlation between openness and the scope of government, but that the relationship between openness and government size is strongest when terms-of-trade risk is highest⁵.

Other authors have focused on the study of the latter effect, namely the increasing inequality generated by trade openness. It is the case, as we will see later, of Rogowski (1987, 1989) and Fernández-Albertos (2002). We consider that this is an aspect of that needs to be analyzed carefully, for it is not clear that things go straightforward in the direction pointed by the compensation

⁵ However, this author considers that government growth is not only due to transfers to mitigate external risk, but also to government consumption.

hypothesis⁶. In this paper, we will focus in this aspect of the hypothesis. We will start by showing the causal mechanism that is implicit in it, and that we think that requires a more in depth analysis than the one has been done in the literature so far.

Compensation hypothesis: causal mechanism linking trade openness and government growth:



⁶ Also, as Fernández-Albertos says, a richer approach to the compensation hypothesis needs to analyze the asymmetrical consequences of openness more than the external risk (2002:5), which cannot account for compensation policies very well.

Compensation hypothesis is establishing a link between trade, inequality and redistribution demands that is not direct, namely that implies different “steps”: increase in trade openness is considered to bring more inequality in society (step 1), which in turn is considered to bring more redistribution demands from the citizenry (step 2). An increase in redistribution demands of the citizenry is considered to bring more government spending in transfers, and therefore more government growth (step 3). These steps are very difficult to disaggregate in practice⁷. In this paper, though, we argue that some of them can be questioned from a theoretical point of view. We mainly discuss Step 1, which we analyze together with Step 2 (as we will explain, our dependent variable will be “redistribution demands”)-. Step 3 remains somewhat out of the scope of our paper, but we make some reference to it in order to make the analysis complete. Overall, we think that if some of the steps of the causal chain are not accepted, the validity of the compensation hypothesis can be largely questioned.

Step 3: Redistributive pressures and government growth

One of the fundamental contributions of Katzenstein’s study is his remark that, with the existence of compensation, distributional struggle had been driven from the private marketplace to the public arena, where labor and capital compete through political negotiation and electoral mobilization (1985: 57). Thus, if studying democracies, we can think that politics of compensation, this is the political economy of the states which are opening their boundaries, are largely determined by citizen demands⁸.

There are different types of politico-economic explanations of government growth, which are not mutually exclusive: “Many arguments in a variety of contexts provide a reason why “government” grows (relatively)” (Alt and Chrystal 1983:190). In these authors’ classification, these arguments include a) policy models, in which government growth is a by-product to policies undertaken by politicians (fiscal drag, asymmetrical stabilization policy, ideological influences), b) explanations linked to the incidence of existent institutions (specially, of the bureaucracy), and c) voting models, in

⁷ For instance, Oppenheimer and Frohlich (1980, quoted in Alt and Chrystal 1983) establish a link between step 2 and 3: their argument is that as long as the median voter has an income less than the mean of all incomes, there will be a majority available to support a candidate promising further redistribution from rich to poor.

⁸ We will focus in democratic regimes, for the mechanisms linking demands and policies are very much different in non-democratic regimes. Analyzing the political economy of authoritarian regimes is out of the scope of this paper.

which dynamics of growth are a characteristic of popular preferences. The latter refer mainly to redistributive pressure of voters⁹. It is therefore hard to establish the extent to which government growth is due to redistribution demands, for there are other variables that are having an effect on the former¹⁰.

At the same time, it is hard to establish the extent to which governments act in favour of the redistributive pressures of voters. As we said, we will not enter deeply in this last point (it is not the aim of the paper to solve it). However, our analysis can be perfectly integrated in a general theory of political consequences of trade openness once we take the median voter theorem (MVT) as a benchmark. This theorem permits us to think that, if the median voter of a country supports income redistribution, the latter will take place –it will take place in the level preferred for this voter-. In other words, as long as the median voter defends a certain level of redistribution, this will be the level provided by a government having obtained the majority of votes. Thus, government will grow as a consequence of redistributive demands.

Steps 1 and 2

Step 2 is the hardest to disaggregate, from our point of view. Mainly because the link between inequality and redistribution demands is generally taken as straightforward. It is arguable that it is difficult to know the extent to which citizens will react to income inequality with redistribution demands, but assuming self-interested rational individuals this implies lesser problems. Redistribution is supported by those benefiting from it, and opposed by those damaged from it. Then, if the distribution of the income increases in terms of inequality, the number of people benefited from redistribution will increase, and the overall distribution demands of the population will increase (and more importantly, the median value on redistribution demands will increase). Thus, it is mainly the distribution of income what provides us with information about redistribution demands: “Increases in

⁹ In this sort of explanations, there are also the ones that refer to the “fiscal illusion, which is “a systematic tendency to misperceive the actual levels of cost and benefits in some tax-spending combination” (Alt and Cristal 1983: 194)

¹⁰ As we have argued, this is why our empirical test will not focus on measures of government growth but on redistribution preferences/demands. We think that this is a more neat measure of what we are trying to observe.

income inequality imply skewer distribution of income and thus higher demands for public redistribution” (Meltzer and Richard, quoted in Fernández-Albertos 2002: 15)¹¹.

Step 1 is the most relevant in this theoretical discussion: we cast doubt on the assumption that increasing trade openness necessary brings more inequality in a country, or that it brings the same level of inequality across countries- as it has been assumed in compensation hypothesis-. We can think that, since countries are differently endowed in type-of-factors and industries, internationalization will have different effects on their distribution of income. In this point, we are largely inspired in Fernández-Albertos (2002). This author makes a seminal contribution to this literature when he analyzes Latin American countries and the effect of trade openness in them. One of his most relevant postulates is that domestic characteristics are a crucial explanatory factor of the distributive consequences of increased internationalization (and –consequently- of public compensation); he says that the lower the *income inequality* generated by internationalization because the low-income groups own those factors with which the country is relatively abundant, or because there are no significant sectors negatively affected by openness, the lower redistribution demands (and consequent lower compensation policies) we would expect. “(...) Whenever increased trade harms those groups situated in the lower end of the income distribution, openness will bring increased demands for distribution. (...) If consequences of trade openness ameliorate the distribution of income by benefiting the less affluent groups of the society, demands for redistribution need not necessarily to increase, and could actually be hypothesized to be reduced” (2002:15). Further, he says that public-sector compensation is conditional on these distributive effects that trade liberalization is expected to yield domestically¹².

There is a crucial distinction to be made between what Heckscher-Ohlin (H-O) and Ricardo-Viner (R-V) perspectives of international trade would predict to be the domestic variables determining the distribution consequences of trade openness -and therefore the redistribution demands issued from trade-. On the one hand, if we consider that we are in a perfectly mobile asset world –or low asset specificity world (H-O framework)-, income distribution would be conditional on the effects of trade

¹¹ Determining the causes of different preferences on redistribution is not an easy task. As Alesina and La Ferrara (2001) say, “The poor favor redistribution and the rich oppose it, but that is not all”. These authors consider that the nature of social mobility determines the preferences for redistribution (in the US, they are negatively affected by social mobility). In any case, the matter in this point has to do with the link between *changes* in inequality and *changes* in redistribution demands, for we think that we should have not problems in assuming that the relationship is very much direct.

¹² Fernández-Albertos assumes that step 3 is direct, and the therefore test his hypotheses with aggregate data on public spending.

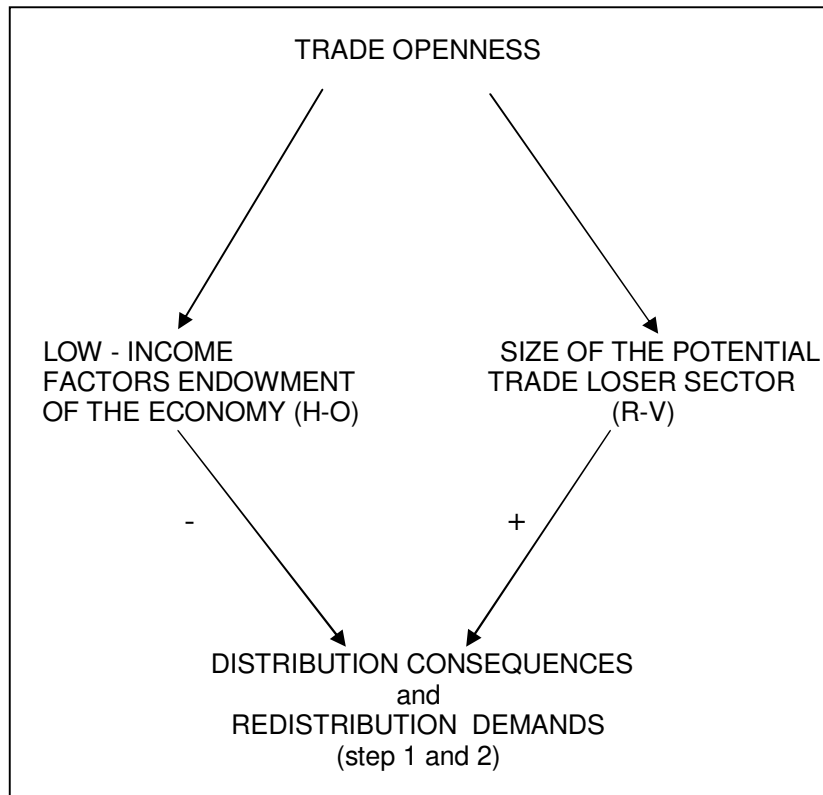
on different type-of-factor owners -settled in different type-of-factor abundant countries-. Within this perspective, it applies the Stolper-Samuelson, which implies that trade exposure of countries produce winners and losers depending on the activities for which the countries have comparative advantage, and their relative intensity in factors (labor, capital and land)¹³. “Owners of factors of production with which the country is comparatively well endowed will benefit from reduction to barriers of trade; local owners of scarce domestic factors will be harmed by liberalization” (Fernández-Albertos 2002:14). In general we can think that in high-income factor¹⁴ abundant countries, trade will bring more inequality, and therefore more redistribution demands. The contrary will happen in low-income factor abundant countries.

On the other hand, if we consider a high specificity world (R-V framework), income distribution is conditional on trade effects on particular industries and sectors: “the distributional consequences of openness do not benefit or harm entire classes, but particular industries or sectors” (Fernández-Albertos 2002:14). If a loser sector or industry is relatively big in a country, inequality will increase (and redistribution demands will decrease). The contrary will happen if the loser sector is relatively small, or if the winner sector is relatively big.

The following diagram summarizes these two theoretical hypotheses –considering both H-O and R-V perspectives-. The diagram illustrates the mediating effect that type-of-factor abundance and sector size have in the relationship between openness and income distribution/redistribution demands:

¹³ Going in this line, for instance, Rogowski (1987, 1989) has considered that the Stolper-Samuelson theorem implies that changes in trade exposure of countries have an effect to the internal political cleavages of the countries, provoking conflicts and coalitions between groups; this depends on the endowment of capital, labor and land of the country, which determines the different interests of the groups and the different coalitions that are formed.

¹⁴ This is, factors related to high-income groups.



Indeed, trade openness affects distribution of income of a country (step 1), which directly affects redistribution preferences/redistribution demands in the country (step 2). However, step 1 is mediated by two main factors: first, the country's relative abundance in low-income factors -the higher the relative abundance of low-income factors, the lower the distributional effects (or the lower the increase in inequality)-. Second, the country's sector composition, or the size of the sector more likely to be a trade loser: the higher its size, the higher the distributional consequences.

As we said, our aim in this paper is to prove the hypotheses that these two elements are mediating the effect of trade openness on redistribution demands in a country. The original idea is taken from Fernández-Albertos (2002). However, we make a fundamental contribution in the issue by focusing in the sphere of redistribution demands -besides of focusing in the sphere of government growth- this is, by not assuming a direct jump through *step 3*-. In this way, we are going into the core of the compensation hypothesis, which we are more capable to put it into question. Indeed, we are not only filling a gap in the study of compensation hypothesis, but we are able to test this "interactive" version of the compensation hypothesis more robustly -free from the "noise" provoked by all the factors that might be having an incidence on government growth, apart from openness-.

2.2. Factor income and preferences for redistribution

The framework presented above has some theoretical implications that we would like to analyze as a secondary endeavour. These implications have to do with the redistribution preferences that particular individuals in a society (and not a majority of them) will present as a result of trade. We cannot rely upon much literature on this, for this is an aspect of trade policy that has not been studied in a large extent¹⁵. Even though, we can derive some interesting theoretical questions from what we have seen so far.

The literature on preferences for free trade is very helpful for the analysis of the nature of the demands of redistribution resulting from trade openness. We assume that if individuals are *egocentric* (vis-à-vis of *sociotropic*), this is: they have preferences for trying to maximize their own welfare (vis-à-vis the welfare of the whole society). Then, preferences for free trade will be largely consistent with demands issued from free trade: those people that are less favourable to make trade freer in a certain setting, will be those asking for more redistribution as a result of openness. Some authors have studied determinants of preferences for protection/free trade (Scheve and Slaughter 2001, Mayda and Rodrik 2002), regarding either characteristics of the individuals (mainly, the effects of trade on their welfare/income) and characteristics of the countries. Scheve and Slaughter say that the main explanatory variable of preferences of free trade is factor income of individuals¹⁶. Depending on if we are in a H-O world, where assets are mobile, or in a R-V world, where assets are non-mobile, factor income will depend on factor-type or industry of employment¹⁷. These authors say, for instance, that in countries well-endowed with more-skilled labor relative to the rest of the world, more skilled workers benefit from freer trade- therefore they are more pro-free trade. Then, we can think that these individuals would present lower redistribution demands (issued from trade openness) than other workers.

¹⁵ As we said, trade policy has focused mostly in the effects at the economic policy level, more than in the redistribution preferences level.

¹⁶ They also consider the effect that free trade may have to the asset values of individuals, but we will not enter in this point.

¹⁷ They find that factor type dominates industry of employment in explaining support for trade barriers. In the US, lower skill -measured by education or average occupation earnings- is strongly correlated with support for new trade barriers. In contrast, employment in industries more exposed to trade is not strongly correlated with support for new trade barriers.

We can derive similar implications from the interactions that may occur between: a) individual factor type and factor type endowments of the economy (following H-O); b) industry of employment of the individual worker and position of the sector in an open economy (R-V). We consider that individuals will present lesser demands for redistribution (resulting from trade) the more they gain from openness. For instance, this will happen either when individuals are high-skilled in a high-skilled labor abundant economy, or low-skilled in low-skilled labor abundant economy; or when individuals are employed in winner sectors of the economy. Analogously, individuals will present higher redistribution demands, the more they are damaged by trade openness (low-skilled individuals in high-skilled countries, and so on). Again, we remark that these hypotheses derive from our previous theoretical discussion, together with the main statements made within the literature on trade preferences. They do not have direct implications on compensation hypothesis. Even though, these hypotheses fit well in our study because are in the line of relating preferences for redistribution of individuals (issued from openness) with country economic characteristics and endowments.

As it is noticeable, in this paper we are regarding to different possible consequences of openness, depending on whether we are in a R-V or in a H-O world. We do not intend to take a decision on which model is more appropriate to explain international trade. However, we do not deny the possibility that our results give us a greater insight of which of the two frameworks of analysis is better.

3. Empirical Analysis

The empirical part of the paper is structured as follows: In 2.1 we present the working hypotheses and we sketch the way they will be tested; in 2.2 we present the data and we define the different statistical models that will be used; in 2.3 we present some preliminary empirical evidence that supports our main hypotheses; in 2.4 we test hypotheses *H1* and *H2* (main hypotheses); and in 2.5 we test hypotheses *H3* and *H4* (secondary hypotheses).

3.1. Working hypotheses

First of all, we hypothesize that the effect of trade on demands for redistribution is mediated through countries' endowments (H-O related hypothesis):

H1: The higher the GDP per capita of the country¹⁸, the higher the redistribution demands issued from trade openness of the median voter of the country.

Second, we hypothesize that the effect of trade on redistribution demands depends on the size of the loser sectors in an economy (R-V related hypothesis). For testing this hypothesis, we will be somewhat conditioned on the data available: we have a heterogeneous group of countries, so it is difficult to say a priori the total of sectors that would be damaged by liberalization in each of them. We decide to focus in the manufacturing sector because it is a sector for which we have reliable data for all countries, and because it is a sector quite likely to be exposed to trade (contrasting, for instance, with agricultural sector¹⁹). At the same time, this sector has already been shown to be relevant in other cases (see Fernández-Albertos 2002 for Latin America case)²⁰.

H2: The bigger the manufacturing sector in the economy, the higher the redistribution demands issued from trade openness of the median voter in the country.

We test these two main hypotheses with two type of analyses. First, we make a macro-level analysis in which we explain the median voter redistribution preferences with a number of macro-covariates. In this case, the unit of analysis is the country (we call this country-level analysis). It is problematic that we have very low statistical efficiency while working with such a small sample of countries. For this reason, we make a second empirical test with individual data, which permits us both to have more efficiency and to control for the compositional effects that individual factors have on the distribution of preferences in the countries. This second test consists on a set of regressions where we consider the pool of individuals' preferences on redistribution, and we explain these values

¹⁸ We proxy country factor-type endowment by GDP per capita. The higher the GDP per capita, the higher the high-income factor endowment of the economy.

¹⁹ We have made some empirical tests with agricultural sector size and we observed no effect. This is explainable by the fact that agricultural goods are protected in almost all countries (we owe this comment to José Fernández-Albertos).

²⁰ Anyhow, we think that more detailed analysis should be done in this direction, testing for different sectors and countries, in order to corroborate more robustly this hypothesis.

with both individual explanatory variables and macro-covariates (we call this two-level analysis). We run different regressions: with the whole sample, by sub-samples and with interaction variables. This permits us to observe the interactive effects of our main variables (thus, these analyses are the most substantively fundamental part of the empirical test). Also, we make post-estimation analyses in order to make our results more illustrative, and especially, in order to observe the predicted preferences for the *median voter* (we do this by fixing all the individual explanatory variables in the median value of their distribution).

As a secondary endeavour, we test two additional hypotheses that are more linked to the literature on preferences for free trade than to literature on trade policy. We are interested in regarding different interactions between individual level variables and macro-covariates, and their effect on redistribution preferences. The first hypothesis, which associates redistribution demands to factor type income of the individual, is linked to the previous H-O based hypothesis:

H3: In countries relative well endowed with high-skilled labor, the higher the skills of the individual, the lower her pro-redistribution preferences resulting from openness.

The second one, which links redistribution with industry income, is linked to the R-V based hypothesis:

H4: In countries where manufacturing sector is relatively big, workers in the manufacturing sector have higher pro-redistribution preferences resulting from openness than workers in other sectors²¹.

As we said, these hypotheses will permit us to know more about preferences on redistribution (specially, their relationship to preferences on trade)²². We will test them by the interaction of macro-covariates and individual level analysis in our initial regression model. More details are given later.

²¹ Additionally, “in these countries, pro-redistribution preferences (issued from trade) of manufacture workers are higher than in countries where manufacturing sector is relatively small”.

²² For H4, we consider only manufacturing sector in order to be consistent with H2. Again, even if the whole of our empirical test of R-V based hypothesis is focused on this sector, but we do not reject the possibility of testing this same hypothesis with other potential loser sectors.

3.2. Data and Models

Datasets

I- Our empirical test relies mainly on individual data from ISSP *1996 Role of government III (ZA Study 2900)*. This study surveys individuals from 23 countries: Australia, West Germany²³, United Kingdom, United States of America, Hungary, Ireland, Norway, Sweden, Czech Republic, Slovenia, Poland, Bulgaria, Russia, New Zealand, Canada, Phillipines, Israel²⁴, Japan, Spain, Latvia, France, Cyprus²⁵. For the aggregate data/macrocovariates, we rely on World Bank 2000 World Development Indicators, and on Garret (2000).

II- We also create a new dataset that has countries as unit of analysis, and that permits us to make the aggregate-level test. We make it with a number macro-covariates, and the average and median values of our dependent variable in the 23 countries (see below for details).

Main variables²⁶

Dependent variable: Redistribution preferences of the individual. We use a single variable of the ISSP dataset, which we recode in different ways in order to facilitate the different analyses. Individuals are asked to respond to the following question: *What is your opinion of the following statement: It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.* Individuals have to respond either *1-Agree strongly, 2-Agree, 3-Neither agree nor disagree, 4-Disagree, 5- Disagree strongly*. These results form a Likert scale, which we inverse in order to have a measure of support for redistribution (this is, the

²³ We will refer to this country as Germany, since we use macro covariates which refer to the unified country (when they are from 1996) or the sum of East and West Germany (when they include time of the pre-1989 period).

²⁴ In the ISSP survey, Arabs and Jews form different categories. For the purpose of our paper, we consider all them altogether. We are interested in having a representative sample of the total citizenship of the countries under consideration.

²⁵ We dropped Italy to problems of availability of data in this country.

²⁶ In this sub-section we present the main variables of the analysis and some descriptives. For all other variables, descriptives and sources see Appendix II.

higher the number in this scale, the higher the support for redistribution). We call this variable **Govredist**.

In order to ease the econometric analysis, we have done two alternative transformations of this variable; first, we have created a three-category variable, **Govredist3**, with value 1 for values 1 and 2 of **Govredist**, value 2 for value 3 of **Govredist**, and value 3 for values 4 and 5 of **Govredist**. Thus, this variable also expresses support for redistribution in an ordinal way, but it is easier to interpret: value 3 expresses what we call *pro-redistribution preferences* (or redistribution demands); value 2 neutral redistribution preferences; value 1 anti-redistribution preferences. This will be the dependent variable in the whole of our two-level analyses. Second, we create a dummy variable of support for redistribution, **Govredistdum**, which we will use for our main robustness test (a binomial logit regression). This variable has value 0 for values 1, 2 and 3 of **Govredist**, and value 1 for values 4 and 5. It expresses support for redistribution in a dichotomous way.

These are the descriptives of the three variables:

Variable	Obs	Mean	Std. Dev.	Min	Max
Govredist	29070	3,531166	1,25279	1	5
Govredist3	29070	2,343584	0,8376458	1	3
Govredistdum	29070	0,5816305	0,4932999	0	1

On the other hand, since we are interested in doing an aggregated analysis, we have to obtain a value of the dependent variable by countries. We do it in two different ways: 1) we create the variable **Avercountries**, which is the mean value of variable **Govredist**²⁷ in each country; 2) we create the variable **Median**, which is the median value of the variable **Govredist** in each country²⁸. We will mainly work with the dependent variable **Median**, for we are theoretically interested in the preferences of redistribution of the median voter of each country²⁹, but we will consider

²⁷ We obtain these variables from the variable **Govredist**, because we are interested in having as much variance as possible in the aggregated variable.

²⁸ Not surprisingly, we obtain values with low variance (they rank from 3 to 5). These values have meaning regarding likert scale (from 1-5).

²⁹ Finding the value of the median voter is not straightforward, for the median voter can be different depending on the dimension considered (ideological, free trade-protectionism, etc.). We have opted to choose for the median value in the dependent variable, for this is the central dimension in our study.

Avercountries for some descriptive analysis. We incorporate these two dependent variables in the countries dataset. These are their descriptives:

Variable	Obs	Mean	Std. Dev.	Min	Max
Avercountries	23	3,588663	0,4817823	2,8275	4,964576
Median	23	3,73913	0,5408236	3	5

Independent variables

The most important independent variables in our analysis are **YTrade** and **Trade**, which are two alternative measures of trade openness. Both of them are indirect indicators of trade openness: they express the magnitude of trade flows relative to GDP (this sort of indirect measure has been largely used in the literature; i.e. Garret 2000: 10; Dutt and Devashish 2002: 117). **Ytrade** expresses the total of trade flows in the same year of the survey, this is 1996³⁰. We will normally use it expressed as percentage over 1 in order to obtain higher coefficients- more easy to interpret-; we will name this variable (substantively equivalent to Ytrade) **Ytrade1**. **Trade** is a measure of the average trade flows on the country over the period 1985-95 (this is, the decade just before the year of the survey)³¹. We think that with these two different measures (one for a single year, and one for a ten year period) we can test our hypotheses more robustly. When we include these variables in the ISSP dataset, all individuals in the same country take the same value³². These are the descriptives:

Variable	Obs	Mean	Std. Dev.	Min	Max
Ytrade	30582	68,22912	29,94973	19,33235	136,6506
Ytrade1	30582	0,6822912	0,2994973	0,1933235	1,366506
Trade	30582	62,59414	28,47968	19	132

³⁰ Source: WB 2000 Development indicators. Variable: *Trade (% GDP)*.

³¹ Source: Garret 2000. We rely on data Garret presents in his Table 1. His variable (Trade) expresses the whole period average % Imports+Exports over GDP.

³² This will happen with all macro-covariates included in the individuals dataset. Obviously, when incorporated in the countries dataset, these variables have one value for each country (this is, there are 23 observations for each variable).

Models

In our first empirical test, we test H1 and H2 with country-level data. Our dependent variable is **Median**, which is an ordinal variable with three categories (from 3 to 5). We think that the most appropriate is to run an **ordinal logit**. With ordinal logit, we estimate a model for a latent variable (y^*). The underlying model is, in this first case:

$$\text{Model (for countries)} \Rightarrow y_j^* = \eta Z_j + \varepsilon, \text{ where } Z_j \text{ is a vector of macro-covariates.}$$

We are estimating y_j^* with a vector of macro-covariates, which should explain variation between countries. We want to introduce **Ytrade1/Trade**, **Log GDP per capita**, **Manuf** and **Unemrate**. However, we will not be able to include them at the same time, due to the lack of data and short number of cases. Then, we will introduce the variables that are crucial for our test: **Trade**, **Log GDP per capita**; and **Manuf**. In this way, at least will be able to run some post-estimations, and we will be able to observe the interactive effects of these variables. We will also make a regression by sub-samples, distinguishing between high GDP per capita countries and low GDP per capita countries³³.

In a second empirical test, our intention is to run three different models, which vary either on their explanatory variables or on their independent variables. As we have said, in this empirical test our intention is to control for individual level factors (compositional factors) that affect preferences for redistribution in these countries.

³³ We will not be able to split the sample between sizes of manufacturing sector due to the lack of cases and small variation in this variable. We run into problems of statistical efficiency.

Brief note about estimation of Ordinal Logit

In any ordinal logit we run in this paper, the rule we follow in order to relate the latent variable to the values of our categorical variable is:

$$y = j \text{ if } \mu_{j-1} \leq y_{ij}^* < \mu_j \text{ for } j = 1..J$$

where μ are the cutting points or threshold parameters that are estimated along with β .

And in order to obtain the probabilities of each category of the dependent variable:

$$\text{Prob}(y=j) = F(\mu_j - \beta x) - F(\mu_{j-1} - \beta x)$$

assuming parallel regression³⁴. Since we are using a Logit function (as F) to estimate the model, computing cumulative probabilities is straightforward:

$$\text{Prob}(y \leq \mu_j) = \frac{e^{\mu_j - x\beta}}{1 + e^{\mu_j - x\beta}}$$

Model 1 is what we call the “naïve sociodemographic” model. We estimate **Govredist3** with a number of independent variables that have been discussed in the literature on preferences for redistribution. We introduce them mainly as controls for our further regressions. Anyway, we are also interested in seeing the sign and size of their coefficients; whether they are coherent with previous studies on the issue or not; and whether they change with the inclusion of the macro-covariates. Unfortunately, in our survey we do not have variables that could permit us to test hypotheses such as that of “public values” or “social rivalry” effects (Corneo and Grüner 2002), neither “social mobility” (Alesina and La Ferrara 2001) in determining preferences for redistribution³⁵. We consider the following variables:

Gender; women are thought to be more pro-redistribution than men.

Age; older people are thought to be less pro-redistribution than younger people.

Married; we can think that civil status may have a negative effect on preferences for redistribution, for marriage may provide more economic stability.

³⁴ Thus, the coefficients of this regression have to be interpreted accordingly to these rule, this is, taking account cutting points. However, and coherently with the rule, we can interpret directly the coefficient as the contribution of the variable on the probability of choosing the 3rd category (pro-redistribution). μ_j equals 1 for this category. See Long 1997: 116.

³⁵ This is not a big problem in the sense that our main interest is in observing the interaction between trade openness and redistribution, more than explaining redistribution preferences per se.

Educyrs (years of education); preferences for redistribution are thought to decrease with level of education³⁶.

Ideology; more leftist people are thought to be more pro-redistribution.

Unemployed; unemployed people are thought to be more reliant on the welfare state and to support politics of redistribution.

Self-employed; self-employed are thought to be less reliant on the welfare state and more linked to “up-mobility philosophy”, therefore more risk-averse and less supporting of redistribution.

Publservant (public servant); public employed are thought to be more pro-redistributive because they are less risk averse.

Manufocc (manufacturing sector employed); employed in manufactures should be more demanding of redistribution if trade is hurting their sector³⁷.

Subjclass (subjective social class); normally, the higher the social class, the lower the pro-redistribution is the individual.

Family income; richer people are thought to be less likely to support redistribution.

Tunion (trade union member); we include it in order to control for the ideological bias that can produce being member of a trade union towards preferences for redistribution.

Rural (living in rural areas); we include it to control for the possible bias that living in a rural area can have in this issue. People in rural areas may feel less prone to suffer upward mobility, so be less risk-averse and more pro-redistribution.

Again, since our dependent variable (**Govredist3**) is an ordinal variable with 3 categories, we think that the most appropriate is to run an Ordinal Logit. The underlying model is, in this case:

<p>Model 1=> $y_{ij}^* = \beta X_i + \varepsilon$, where X_i is the vector of individual explanatory variables.</p>
--

The interpretation of the coefficients and the computation of individual probabilities require following the same rules in the diagram above.

Models 2 and 3 are almost equal between them. They both add a vector of macro-covariates into the individual level equation of Model 1; thus, we make a two-level analysis. They differ in that, while in Model 2 this vector includes **Ytrade1** as a measure of openness, in Model 3 it includes **Trade**. Other included variables are: **Manuf** (Size of the manufacturing sector; value added of manufactures as %GDP); **Log Capita GDP**; **Unemrate** (Rate of Unemployment); **Population over 65** (% of total population over 65 years). These are macroeconomic variables that either the literature

³⁶ Alesina and la Ferrara (2001:2) observe that respondent’s preferences for redistribution decrease with their level of education; also women and racial minorities are more favourable to redistribution.

³⁷ Even if we do not have a strong hypothesis linking manufactures to preferences for income redistribution, we include the variable in the initial analysis in order to be able to test H4 afterwards.

considers that have an incidence in the preferences of redistribution of the citizens in a country (such as **Unemrate** or **Population over 65**, which should have a positive effect) or, as we argue, have an interactive effect along with trade in shaping these demands (**Log Capita GDP** and **Manuf**).

We estimate an equation that has the following form:

Model 2 and Model 3=> $y_{ij}^* = \beta X_i + \eta Z_{ij} + \varepsilon$, where X_i is the vector of i individual variables, and Z_{ij} is the vector of macro-covariates.

Model 2 is the baseline of our empirical analysis (Model 3 is mainly a robustness test instrument). From this, we develop the analyses that will allow us to observe the interactive relationship between the main variables (**Ytrade**, **Log GDP per capita**, **Manuf** and **Govredist3**):

i) We run regressions by subsamples, differentiating 1) high GDP per capita countries vs. low GDP per capita countries (in order to test *H1*); 2) high manufacturing countries vs. low manufacturing countries (in order to test *H2*).

ii) We run three different regressions of Model 2 including interactions: 1) model with an interaction between **Log GDP per capita** and **Ytrade1**; 2) model with an interaction between **Manuf** and **Ytrade1**; 3) Model including these two interactions altogether³⁸.

After running the regressions with interactions 1) and 2), we make a set of post-estimation analyses that permit to observe predicted redistribution preferences of the median voter of a country depending on the combination of trade openness, wealth and size of manufacturing sector.

Finally, in order to give robustness to our results, we replicate the main individual level regression with a binary logit; using the dependent variable **Govredistdum**. The estimation model is in this case different, because our dependent variable is dichotomous, and not ordinal³⁹.

Hypotheses *H3* and *H4* are tested by using main **Model 2**. We create different interactions or post-estimations in order to see which is the effect of trade openness on redistribution preferences

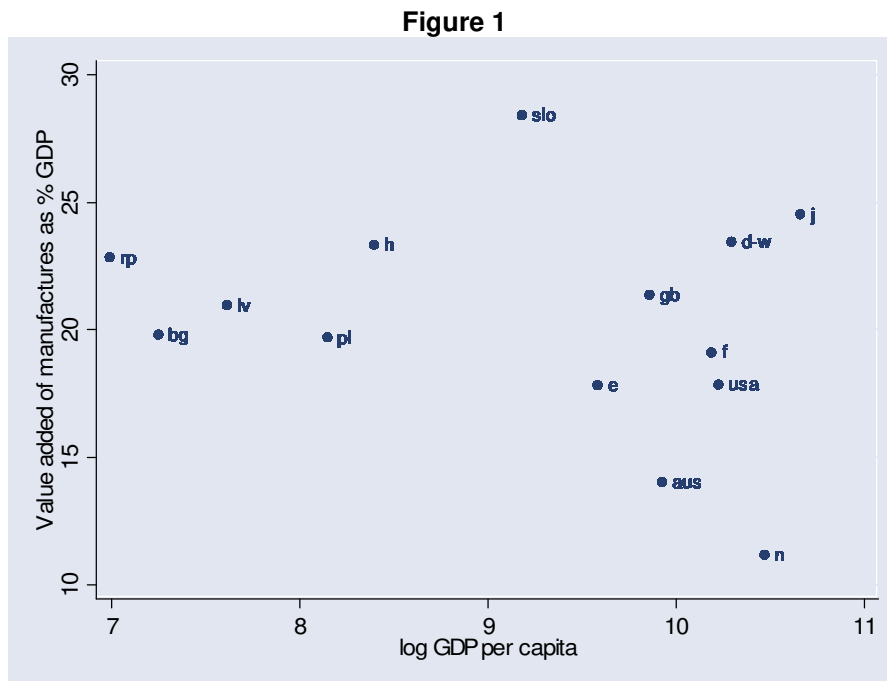
³⁸ Regression with sub-samples and the inclusion of interactions mean a slight changes in the specification of the Model 2. These mainly affect the interpretation of the coefficients of the interacted independent variables. We will explain the interpretation when we face the empirical results (next section).

³⁹ We will not enter in details of the logit model, for this is just a robustness test and not a part of the core of our empirical test.

distinguishing individuals by a) their level of skills (proxied by years of education); b) sector of occupation (manufacturing or otherwise). Obviously, we consider these effects distinguishing by countries' size of manufacturing sector, or wealth (GDP per capita)⁴⁰.

3.3. Preliminary empirical evidence

In this section, we show some preliminary empirical evidence, which we argue it is quite consistent with our main hypotheses. First of all, in Figure 1 we can observe the distribution of the countries in the two main variables that we hypothesize that mediate the effect of trade on redistribution: the size of the manufacturing sector in the country, and the GDP per capita of the country (the log of this value). We can see that we have quite variation in the GDP axis, but not much variation in the manufacturing axis. Therefore, with this sample of countries, we will probably have more difficulties to test the RV hypothesis (*H2*), than H-O hypothesis (*H1*).



⁴⁰ As before, when we make interactions, there are some changes in the specification of the estimation model. We will make the explanatory comments of the coefficients when we explain the results.

Figure 2 graphs the relationship between trade and average preferences for redistribution across countries. We observe that there is a visible positive relationship between these variables, showing evidence supportive of the compensation hypothesis.

Figure 2

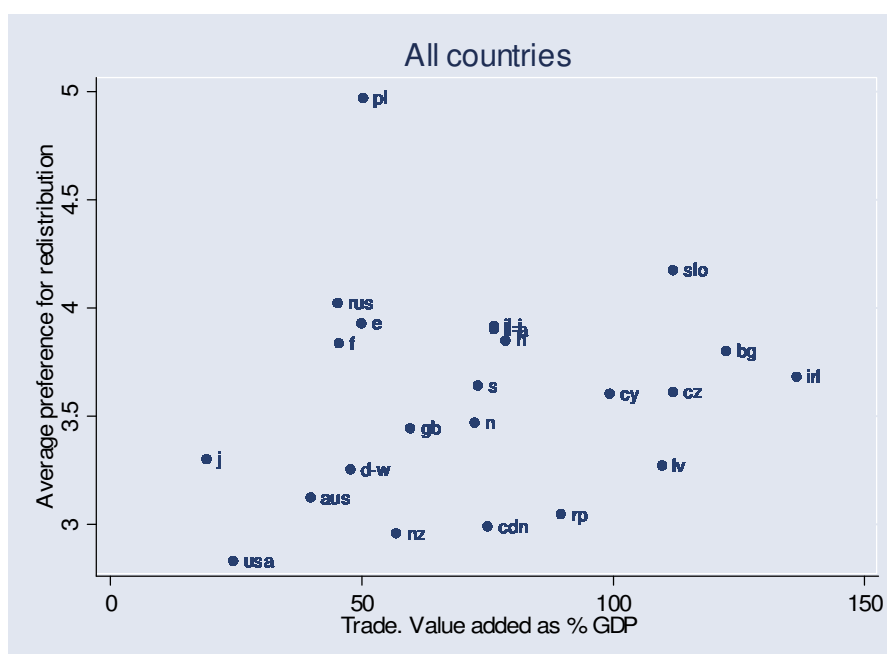


Figure 3 graphs the same relationship, but looking at the median voter value on the redistribution axis. Even if the relationship is positive, it is less clear than before because of the reduction of variance that implies working with a categorical variable (and with a median value instead of an average).

More importantly, looking at Figures from 4 to 7, we can argue that our hypotheses *H1* and *H2* are probably going in the right direction. In figures 4 and 5 we can observe how *H1* is visually taking place: Figure 4 graphs value **Ytrade** and **Avercountries** for countries with a GDP per capita over the mean of the sample (from now, “Rich” countries); while Figure 5 does the same for countries with a GDP per capita below the mean of the sample (“Poor” countries⁴¹).

⁴¹ We call these countries Rich and Poor in order to distinguish them. We are not arguing they are Rich and Poor regarding world standards, but regarding our sample of countries’ standards.

Figure 3



Figure 4

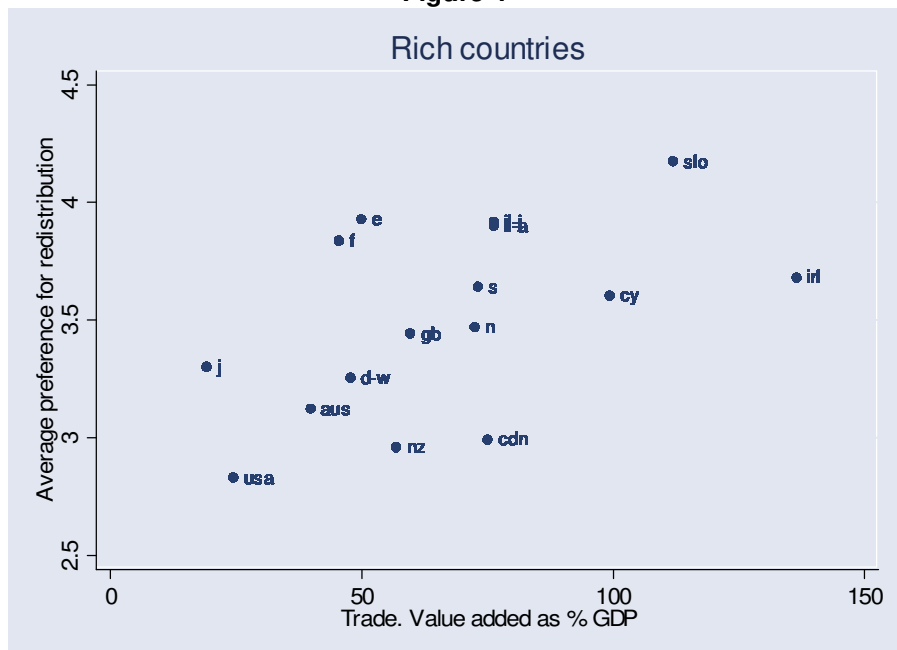
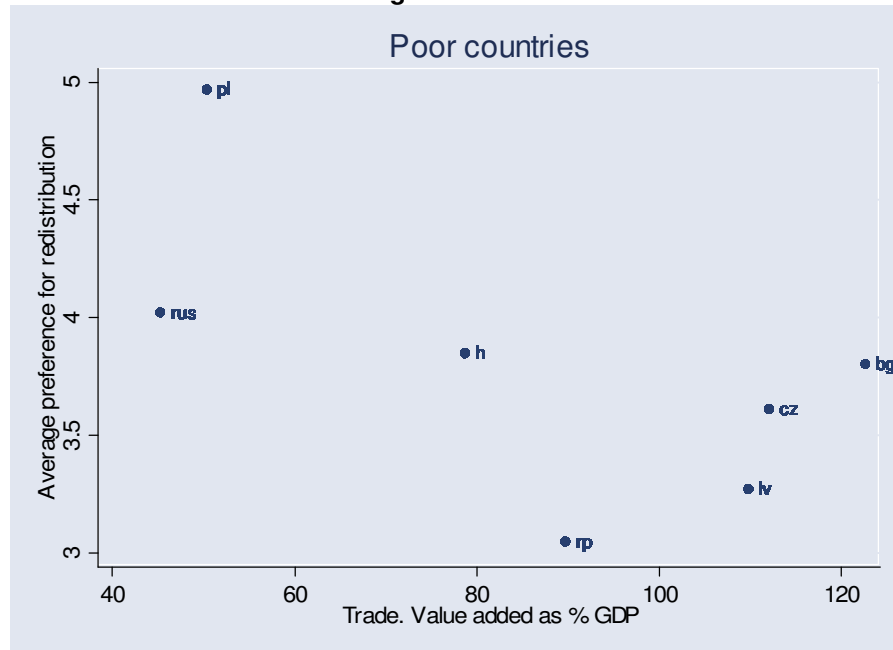


Figure 5



In Rich countries, relationship between trade openness and redistribution preferences is clearly positive. In contrast, the relationship shows to be negative in Poor countries (thus, not only the relationship is smaller than in Rich countries, but it is opposite). This goes in the line to supporting that trade only is accompanied with redistribution demands there where it is harmful to the overall inequality of a country. It does not happen when it does not increase inequality or it decreases it, as it hypothetically does in low high-income factor endowed countries⁴².

In Figures 6 and 7 graph trade and average redistribution preferences distinguishing by size of the manufacturing sector in the country. We have labelled as “Low Manufacturing” countries those which have a size of manufacturing below the mean value in the sample, and “High Manufacturing” countries those above the mean. We observe a positive relationship between **Ytrade** and **Avercountries** in High Manufacturing countries (as expected), but also a positive relationship in Low Manufacturing countries. In the latter case, though, the relationship is less clear (and probably smaller).

⁴² In Appendix II we present the same graphs with **Median** instead of **Avercountries**. However, these are less illustrative due to the nature of **Median** variable.

Figure 6

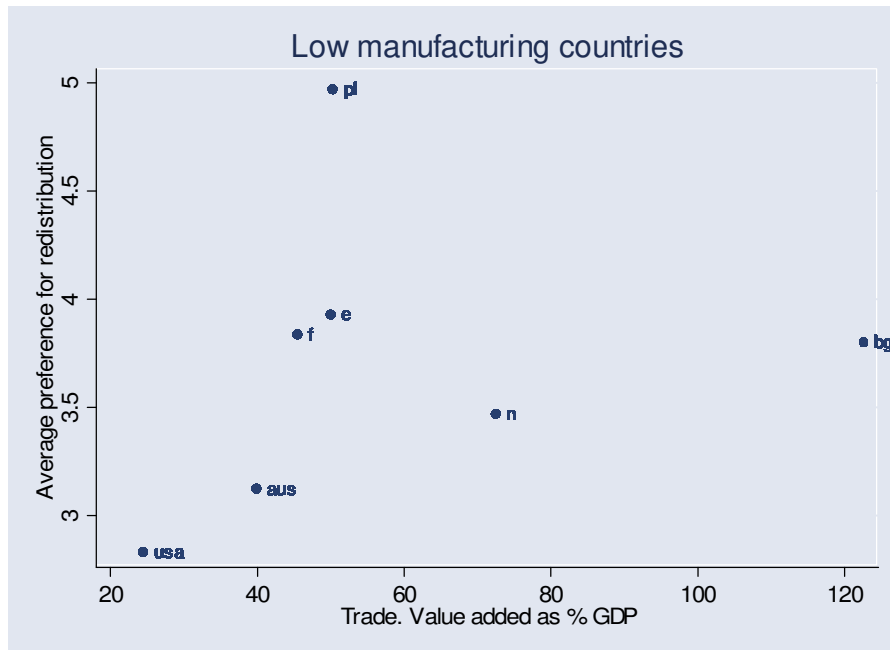
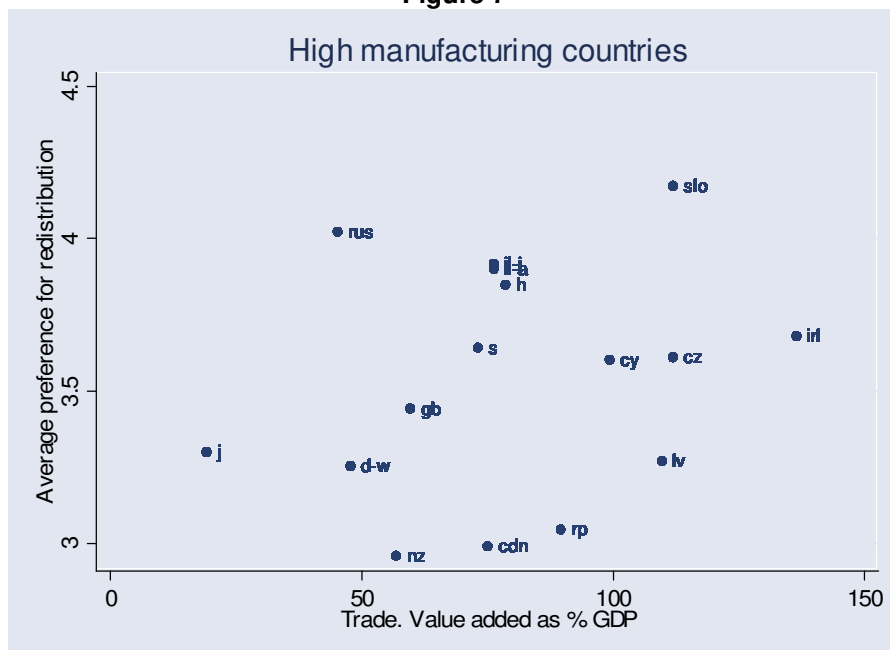


Figure 7



The evidence showed is not conclusive, for we are only plotting countries median and average redistribution preferences with these variables, and not regressing them nor controlling by other variables. Interestingly, though, this evidence seems to be supporting *H1* and *H2* (it is less clear for *H2* probably due to the low variance we have in **Manuf** for our sample of countries). The statistical analyses in the next sections will be the “proof of the cake”.

3.4. Test of Hypotheses 1 and 2

Country level analysis

We run an ordinal logit to estimate **Median** with a vector of the main macro-covariates. As an indicator of openness we use **Trade** instead of **Ytrade** because we have less missing cases with the former variable. As independent variables we introduce **Manuf** and **Log GDP per capita**. Results of the regression for all countries show that trade openness has a positive effect on redistribution preferences of the Median voter of the countries.

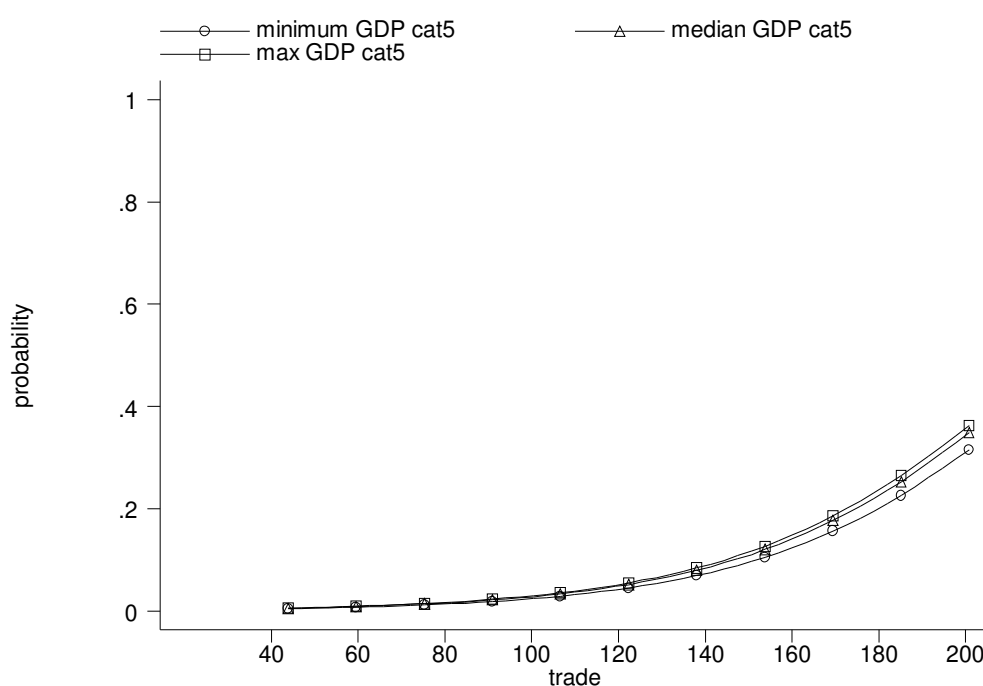
Table 1. Ordinal logit with Median redistribution preferences (Countries)

Trade Openness and Preferences for Redistribution. Countries		
Dependent Variable: Median		
Independent Variable	Coefficient	e^bStdX
Manuf	-0,1930203 (0,3184954)	0,4308
Log	0,7692409 (0,8257225)	2,6614
Trade	0,160486** (0,0719256)	171,678
cut_1	10,47353 (9,446807)	
cut_2	20,89016 (10,4059)	
Pseudo R2	0,5182	
Prob>chi2	0,0188	
Number of observations	14	
Robust standard errors in brackets *** significant at 1%; ** significant at 5%; * significant at 10%		

Indeed, **Trade** has a largely substantive effect on **Median**, and the overall fit of the regression is pretty high (R^2 is 0,51). We are conscious that this model has some problems of statistical efficiency (probably this is why **Log GDP per capita** is not statistically significant), and that it is problematic that we cannot introduce all the macro-covariates we wanted to consider from a theoretical point of view (luckily, the two-level analysis will help us to solve these “statistical efficiency” problems).

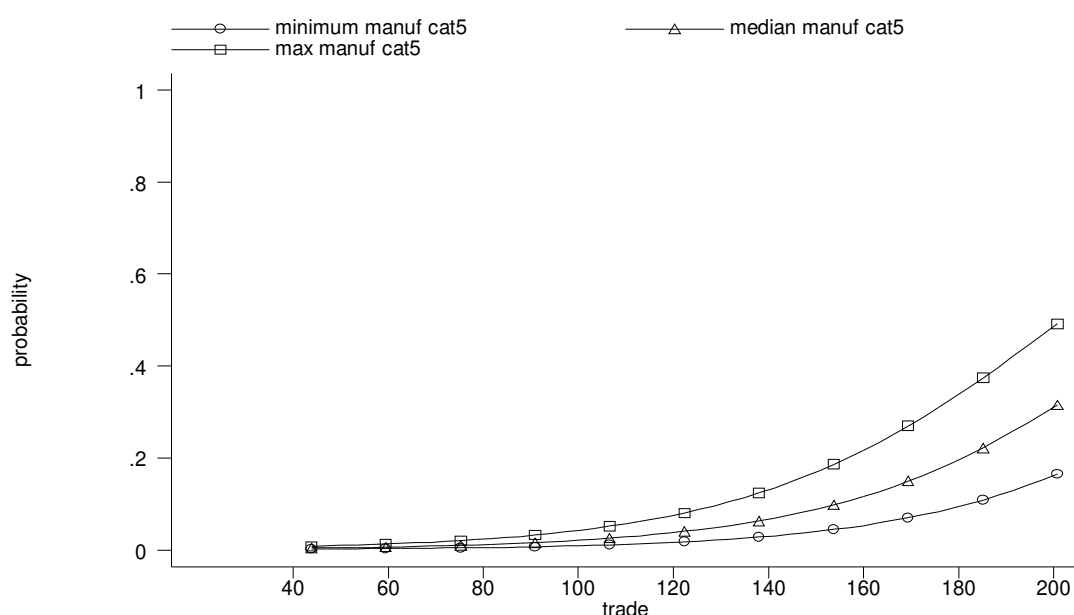
From regression in Table 1, we make some post-estimation analyses in order to observe the relationship between the three variables considered. In Figures 8 and 9 we graph probability of category 5 of variable **Median** (the highest pro-redistribution value in the scale), depending on levels of **Trade** and **GDP per capita** (Figure 8) or **Manuf** (Figure 9). Since the estimated coefficient of **Trade** is positive, this has a positive effect on pro-redistribution preferences in all cases. However, and consistently with *H1* and *H2*, this effect is not homogeneous between countries. It is much higher in both countries with a high level of GDP per capita (vis-à-vis countries with median and low level of GDP), and countries with a big manufacturing sector (vis-à-vis countries with median and small manufacturing sectors).

**Figure 8. Predicted probability of category 5 (for Median voter).
By trade and GDP percapita**



Indeed, in poor countries, trade brings lesser demands for redistribution than in rich countries: we can see that there are not practically differences in redistribution demands between countries in low-trade levels; these differences appear along with increases in trade openness. This result is quite consistent with *H1*.

**Figure 9. Predicted probability of category 5 (for Median voter).
By trade and size of manufacturing sector**



As for manufacturing, we can observe that its interactive effect is even bigger than GDP's. As before, differences between countries are very slight in low levels of trade openness, and they become larger as trade increases (they increase in a larger extent than before).

Finally, we run a sub-sample regression distinguishing by levels of GDP⁴³. Even if results are not very robust statistically, they point towards the same direction than post-estimation graph in Figure 8: for Rich countries, **Trade** has a higher positive effect on pro-redistribution demands than for Poor countries. Even if the coefficient is not statistically significant for Rich countries, it is substantively bigger than for Poor ones. The coefficient is positive in both cases.

⁴³ Like before, we split the sample between what we call "Rich" countries, which are those with GDP per capita above the sample mean, and "Poor" countries, which are those with GDP per capita equal or below the sample mean.

Table 2. Ordinal logit with Median redistribution preferences by sub-samples (“Rich” and “Poor” countries)

Trade Openness and Preferences for Redistribution. Countries				
	Dependent Variable: Median			
Independent Variable	GDP per capita > sample mean		GDP per capita <= sample mean	
	Coefficient	e ^b StdX	Coefficient	e ^b StdX
Manuf	-0,6107064 (0,709341)	0,0629	0,04718 (0,3065086)	1,1664
Trade	0,5400827 (0,5512156)	781,14	0,0834543* (0,0454316)	14,7162
cut_1	11,31255 (13,40391)		4,959699 (5,426625)	
cut_2	- -		1,128661 (6,628126)	
Pseudo R2	0,5023		0,3970	
Prob>chi2	0,6181		0,0970	
Number of observations	8		6	
Robust standard errors in brackets *** significant at 1%; ** significant at 5%; * significant at 10%				

Unfortunately, as we have said, we cannot run a sub-sample regression distinguishing by size of manufactures, because we have not much variance and we have statistical efficiency problems⁴⁴.

Two- level analysis

Pooling regression

We proceed to test *H1* and *H2* by the two-level analysis, this is, controlling by compositional effects of individual preferences in the distribution of preferences of countries. We run an ordinal logit regression with the dependent variable **Govredist3** for Models 1, 2 and 3. In Table 1, there are the coefficients for the explanatory variables in each model, and the effect on the odds of one standard error deviation in the explanatory variables. The latter statistic permits us to compare the coefficients in a somewhat standarized way. In the table, there are also the estimated parameters μ or cutpoints.

⁴⁴ We tried to run these sub-sample regressions, but for one of the sub-samples all coefficients were completely determined. Results can be asked to the author.

Table 3. Ordinal Logit Regression for all Individuals and Countries

Trade Openness and Preferences for Redistribution						
Dependent Variable: Govredist3						
Independent Variable	Model 1		Model 2		Model 3	
	Coefficient	e^bStdX	Coefficient	e^bStdX	Coefficient	e^bStdX
Gender	0,1848024*** (0,0588136)	1,0966	0,1529521* (0,0791706)	1,0794	0,166116** (0,0793427)	1,0866
Age	-0,0036816* (0,0021333)	0,9494	-0,005972** (0,0028637)	0,9176	-0,0049049* (0,0028741)	0,9318
Married	-0,0098542 (0,0609749)	0,9953	-0,0757778 (0,0812696)	0,9644	-0,0896819 (0,081442)	0,9581
Educyrs	-0,0789321*** (0,0107519)	0,7762	-0,0762014*** (0,0156211)	0,7834	-0,0695001*** (0,015677)	0,8004
Ideology	-0,4759278*** (0,0323348)	0,6415	-0,4647329*** (0,0440751)	0,6521	-0,4757614*** (0,0441869)	0,6456
Unemployed	0,0383993 (0,1767592)	1,0065	-0,2006448 (0,2051857)	0,9653	-0,1770969 (0,2058004)	0,9693
Self-employed	-0,694562*** (0,190909)	0,9038	-0,4639475** (0,218686)	0,9246	-0,3934858* (0,2197559)	0,9357
Publservant	0,5971345*** (0,0608063)	1,3468	0,5816508*** (0,0959806)	1,3365	0,5276622*** (0,0972863)	1,3010
Manufocc	0,1776413** (0,0738807)	1,0843	0,1072478 (0,0966818)	1,0520	0,1170833 (0,096649)	1,0569
Subjclass	-0,1782783*** (0,0291802)	0,8166	-0,1557632*** (0,0381333)	0,8350	-0,1727867*** (0,0384314)	0,8187
Family Income	-0,2431234*** (0,0526533)	0,8769	-0,3218308*** (0,0755679)	0,8510	-0,3257694*** (0,075576)	0,8493
Tunion	0,242322*** (0,0606884)	1,1252	0,01659459* (0,0947523)	1,0773	0,124779 (0,0950434)	1,0576
Rural	0,2686287*** (0,0661568)	1,1264	0,2239573** (0,0865354)	1,1083	0,2084674** (0,0865267)	1,1004
Manuf			0,0652643*** (0,0118622)	1,3379	0,0415331*** (0,0129711)	1,2035
Log capita GDP			0,5881709*** (0,089131)	1,8959	0,5357439*** (0,0751311)	1,7908
Unemrate			0,1471879*** (0,0228689)	1,5609	0,165448*** (0,0225921)	1,6495
Population over 65			-0,0394472 (0,0294128)	0,9178	-0,0622083** (0,0284116)	0,8735
Ytrade1			1,091799*** (0,2329747)	1,3924		
Trade					0,0134516*** (0,0020697)	1,5224
cut_1	-4,4069 (0,237879)		3,453078 (0,9404103)		2,433298 (0,841991)	
cut_2	-3,442284 (0,2358473)		4,418186 (0,9416737)		3,403814 (0,8429278)	
Pseudo R2	0,0783		0,0981		0,1017	
Prob>chi2	0,0000		0,0000		0,0000	
Number of observations	5396		3164		3164	

Robust standard errors in brackets
*** significant at 1%: ** significant at 5%: * significant at 10%

Once we know the model has been well specified⁴⁵, we can proceed to analyse the results. The results of Model 1 are quite consistent with what we hypothesized about the effects of individual variables on preferences of redistribution: Gender has a positive effect (being women more pro-redistribution than men); Age has a significant negative effect, as well as Years of education and Ideology (the rightest the individual, the less pro-redistribution she is). Civil status and unemployment have no effect. As we supposed, being self-employed has a negative effect on redistribution, while it happens the contrary with being public servant (due to different risk aversion attitudes). Being employed in the manufacturing sector has a positive effect, as well as being a trade union member and living in a rural area. Finally, family income has a negative effect: the richest the family, the lesser pro-redistribution preferences. These individual coefficients maintain their sign and almost all maintain their statistical significance after introducing the macro-covariates –in Models 2 and 3- (this happens for all variables except for **Manufocc** and **Tunion**, which lose it).

What are really important in this table are the coefficients for **Ytrade** and **Trade**, in Models 2 and 3 respectively. Both of them are positive, statistically significant at the 1% and have practically the same substantive effect. We can assert quite robustly, then, that trade openness has a positive effect on pro-redistribution preferences of individuals. At the meantime, we can observe that other macro-covariates are also explanatory: it is the case of **Unemrate**, which has a positive effect (the higher the unemployment rate in the country, the higher the probability of pro-redistribution preferences), and of **Log capita GDP**, and **Manuf** (also having a positive effect).

**Robustness test: regression with Logit*

As a robustness test, following the example of Alesina and La Ferrara (2001), we run a new regression with binomial logit. The dependent variable here is **Govredistdum**. We run the three models we have run with ordinal logit before: naïve sociodemographic model (Model 1); two-level

⁴⁵ We have run the Wald test with all three models, and we can say that, in general, there is not a violation of the parallel regression assumption. The coefficients for the different categories of the dependent variable are “close” between them, so ordinal logit is an appropriate model for our data. In order to assure this, we make a test suggested by Long and Freese (2001:192), which consists on comparing the predicted probabilities of the results obtained with ordinal logit with the predicted probabilities of the results obtained with multinomial logit (we do it for Model 2 and category 3 of **Govredist3**). We observe that these probabilities have a strong correlation and that have the same distribution shape (see **Figure 10** in Appendix); thus, we can assert that ordinal logit is a good estimation model for our data.

model with variable for openness **Ytrade1** (Model 2), and two-level model with variable **Trade** (Model 3).

Table 4. Robustness test. Model with Binomial Logit

Trade Openness and Preferences for Redistribution						
Dependent Variable: Govredistdum						
Independent Variable	Model 1		Model 2		Model 3	
	Coefficient	e^bStdX	Coefficient	e^bStdX	Coefficient	e^bStdX
Gender	0,1381246** (0,0615913)	1,0714	0,1236235 (0,0838863)	1,0637	0,13548 (0,0841578)	1,0700
Age	0,0001256 (0,0022232)	1,0018	-0,0024763 (0,0029956)	0,9650	-0,0013341 (0,003016)	0,9810
Married	0,0091754 (0,0638103)	1,0044	-0,0721265 (0,0860105)	0,9661	-0,0881379 (0,086382)	0,9588
Educyrs	-0,0725614*** (0,0112226)	0,7922	-0,0722525*** (0,0163767)	0,7934	-0,0652791*** (0,0164516)	0,8113
Ideology	-0,4478656*** (0,0337603)	0,6585	-0,4248111*** (0,0459941)	0,6765	-0,4358015*** (0,0461315)	0,6697
Unemployed	-0,0032715 (0,1865953)	0,9994	-0,281712 (0,2309335)	0,9517	-0,256971 (0,2320148)	0,9558
Self-employed	-0,6678448*** (0,2191859)	0,9073	-0,3986263 (0,2519297)	0,9349	-0,3180457 (0,2533865)	0,9477
Publservant	0,6013193*** (0,0626518)	1,3496	0,5509909*** (0,0990527)	1,3162	0,4944106*** (0,1001933)	1,2796
Manufocc	0,1580649** (0,0769339)	1,0747	0,1099474 (0,1019279)	1,0533	0,1175371 (0,1020699)	1,0571
Subjclass	-0,1782321*** (0,0304503)	0,8167	-0,1436851*** (0,0400696)	0,8468	-0,1619211*** (0,0404853)	0,8291
Family Income	-0,2199199*** (0,0568059)	0,8879	-0,3393248*** (0,0819386)	0,8436	-0,3459403*** (0,0823264)	0,8408
Tunion	0,216745*** (0,0630276)	1,1113	0,1937751** (0,0975009)	1,0908	0,1511392 (0,0981016)	1,0701
Rural	0,2238634*** (0,0691655)	1,1043	0,1941669** (0,0911239)	1,0932	0,1800588** (0,0911859)	1,0862
Manuf			0,0585748*** (0,0122453)	1,2986	0,0315686** (0,013475)	1,1512
Log capita GDP			0,6267032*** (0,0910168)	1,9770	0,5490566*** (0,0761518)	1,8169
Unemrate			0,1616102*** (0,0234919)	1,6305	0,1799482*** (0,0232588)	1,7235
Population over 65			-0,0641727** (0,0295114)	0,8698	-0,0845097*** (0,0285546)	0,8322
Ytrade1			1,279646*** (0,2420132)	1,4740		
Trade					0,0151113*** (0,0021708)	1,6034
Constant	3,113615*** (0,247123)		-4,834071*** (0,9520124)		-3,526566*** (0,8416371)	
Pseudo R2	0,093		0,1198		0,125	
Prob>chi2	0,0000		0,0000		0,0000	
Number of observations	5396		3164		3164	

Robust standard errors in brackets
*** significant at 1%; ** significant at 5%; * significant at 10%

We see that the model remains practically the same than before, with the positive finding that Pseudo-R² is a little bit higher, so that we gain in goodness-of-fit. One of the advantages of running a binomial logit is that we can obtain some measures of fit that we could not obtain before (ordinal logit has more limitations in this sense than binomial logit). Indeed, if we regard statistics of goodness-of-fit such as the percentage of correctly predicted cases (see tables of classification in Appendix II), we see that this increases from 67,55% of Model 1 to 68,58% of Model 2, and 69,28% of Model 3, which indicates that macro-covariates have a significant effect in explaining preferences for redistribution. This is also observable with the increase Pseudo R² has from Model 1 to Models 2 and 3. Again, **Trade** is having a slightly more significant effect than **Ytrade1**.

Thus, despite we do not have a very high R², we have robust evidence that, in general, trade has a positive effect on redistribution demands when we consider all countries in a single regression (both controlling for compositional effects and not). This goes in favour of the compensation hypothesis, which predicts government growth due to openness. However, the following empirical analyses will tell us whether this hypothesis needs to be reconsidered, or if we can accept that redistribution demands issuing from trade are equal in all countries. Already in the country-level analysis we have observed that the effect of trade on median voter redistribution preferences is mediated by factor-type endowment and size of particular sectors. Here, since we are working with a larger number of cases, we will be able to test this more robustly. We will be even able to estimate the relative size of the effects of these mediating variables (that is, which mediating variable is more important?). Furthermore, the post-estimations will permit us to fix the individual variables at the median value, thus to look at the redistribution effects of these variables on the redistribution values of a hypothetical *median voter*⁴⁶.

Regressions by sub-samples and with interaction terms

First of all, we do the same than in the country-level analysis and we split the sample between Rich and Poor countries. We run Model 2 for the two-subsamples and we obtain the results in Table 5.

⁴⁶ This will permit us to link results of the two-level analysis and the country-level analysis more correctly (as well as to link them with the theoretical baseline of our study).

Table 5. Regression by Sub-samples (by GDP per Capita)

Trade Openness and Preferences for Redistribution by Sub-samples (GDP per capita)				
Dependent Variable: Govredist3				
Independent Variable	Model 2 GDP per capita > sample mean		Model 2 GDP per capita <= sample mean	
	Coefficient	e^bStdX	Coefficient	e^bStdX
Gender	0,1862867** (0,0772293)	1,0975	0,2812492*** (0,0963684)	1,1506
Age	-0,0066422** (0,0028252)	0,9089	0,008275** (0,0037151)	1,1204
Married	-0,1218643 (0,0793917)	0,9420	0,1042259 (0,1016333)	1,0488
Educyr5	-0,0487761*** (0,0142858)	0,8555	-0,0799984*** (0,0194965)	0,7807
Ideology	-0,672034*** (0,0459023)	0,5560	-0,2153405*** (0,0489429)	0,8058
Unemployed	-0,0487348 (0,2536589)	0,9927	-0,0165356 (0,2401636)	0,9969
Self-employed	-0,2838641 (0,2016985)	0,9470	(1)	(1)
Publservant	0,2621928*** (0,0948486)	1,1277	0,3071318*** (0,1039425)	1,1549
Manufocc	0,2203816** (0,1068816)	1,0908	0,0784226 (0,1137733)	1,0396
Subjclass	-0,196045*** (0,0391362)	0,7990	-0,1613931*** (0,0494493)	0,8429
Family Income	-0,2411463*** (0,0655332)	0,8655	-0,3575158*** (0,096751)	0,8523
Tunion	0,0934227 (0,0933898)	1,0472	0,2541613** (0,1012105)	1,1285
Rural	0,1600998* (0,0872783)	1,0709	0,3545098*** (0,1053303)	1,1772
Manuf (2)	-	-	-	-
Unemrate	0,054373*** (0,0132096)	1,1756	-0,0103942 (0,0170391)	0,9710
Population over 65	0,1111478*** (0,0217211)	1,2614	.0,0482583** (0,0237489)	1,1120
Ytrade1	0,7693406*** (0,1267701)	1,2816	-0,548372*** (0,1956664)	0,8687
cut_1	-2,489567 (0,4817395)		-3,431045 (0,5491568)	
cut_2	-1,424461 (0,4796154)		-2,536856 (0,5467954)	
Pseudo R2	0,1052		0,0578	
Prob>chi2	0,0000		0,0000	
Number of observations	3057		2339	

Robust standard errors in brackets

*** significant at 1%; ** significant at 5%; * significant at 10%

(1)self-employed drops due to collinearity

(2) When we include Manuf, Ytrade1 drops due to collinearity. Thus, we do not include it in this analysis.

In this case, results are even more salient than before: it is not that in Rich countries the coefficient of **Ytrade1** is bigger than in Poor countries, but that in the former the coefficient is positive while in the latter it is negative. Therefore, while trade increases the odds of having pro-redistribution preferences in Rich countries, it decreases it in Poor countries (the odds values are 1,28 and 0,86 respectively). In both cases the coefficients are highly statistically significant. These results are consistent with *H2*, and they are coherent with the preliminary empirical evidence we showed in Figures 4 and 5.

In Table 6, we observe that the same happens with size of manufacturing sector. Before, we could not test this (in the country-level analysis) due to problems of efficiency, but we could infer from the post-estimation graphs that was happening something similar than with level of GDP. Here we can have some confirmation of this: **Ytrade1** has a positive coefficient for High manufacturing countries and a negative one for Low manufacturing countries (the odds are 1,33 and -0,85 respectively)⁴⁷.

In Tables 7 and 8 we have more evidence consistent with this. We run two regressions with interactions of GDP per capita and trade, on the one hand, and manufactures and trade, on the other. Since we are introducing GDP per capita and manufactures as dummy variables (0 for poor/low manufacturing; 1 for rich/high manufacturing, respectively), we do not have problems of collinearity, and therefore we can control for GDP and Manuf respectively. We observe that results do not change when introducing these controls, and that they are in harmony with the sub-samples outcomes⁴⁸.

⁴⁷ As it is noticeable in the tables, we have a problem when doing the regressions by sub-samples, both by **GDP per capita** and by **Manuf**: when we introduce the two variables, **Ytrade1** drops due to collinearity. (this is why we run the sub-sample regressions without one or the other variable) We consider that this happens because there is a certain correlation between these variables that increases with the division by sub-samples, and brings collinearity problems. In Appendix II we present a table that shows the correlations between these variables when dividing by sub-samples (vis-à-vis to when division is not made), and that shows that this is exactly the case.

⁴⁸ Descriptives of created dummies and interaction variables are available in Appendix II.

Table 6. Regression by Sub-samples (by Manufacturing sector)

Trade Openness and Preferences for Redistribution by Sub-samples (Manuf)				
Dependent Variable: Govredist3				
Independent Variable	Model 2 Manufacturing, Value Added %GDP> sample mean		Model 2 Manufacturing, Value Added %GDP<= sample mean	
	Coefficient	e^bStdX	Coefficient	e^bStdX
Gender	0,1975891*** (0,0755634)	1,1036	0,1926704* (0,099579)	1,1010
Age	0,0019996 (0,0027609)	1,0292	-0,0127436*** (0,0036278)	0,8427
Married	0,0055853 (0,07785)	1,0027	-0,1826912* (0,1024088)	0,9155
Educyrs	-0,3763348*** (0,0412929)	0,8114	-0,6362745*** (0,0535553)	0,7854
Ideology	-0,0636133*** (0,0135538)	0,7069	-0,0833199*** (0,0193052)	0,5453
Unemployed	0,0547533 (0,197199)	1,0110	-0,4834661 (0,4672069)	0,9596
Self-employed	-0,253391 (0,3989438)	0,9793	-0,4380553** (0,2189314)	0,9100
Publservant	0,4498857 (0,0779488)	1,2512	0,6795883*** (0,1381682)	1,3707
Manufocc	0,1034831 (0,0925187)	1,0495	0,228282* (0,1277914)	1,1029
Subjclass	-0,2824362*** (0,0401633)	0,7311	-0,1262733*** (0,0460893)	0,8613
Family Income	-0,1973997*** (0,068442)	0,8989	-0,2695717*** (0,0903549)	0,8642
Tunion	0,2290214*** (0,0787522)	1,1204	0,2068727* (0,1210043)	1,0986
Rural	0,2648051*** (0,0869944)	1,1250	0,2182652* (0,112672)	1,1008
Log GDP per capita (1)	-	-	-	-
Unemrate	0,0261203* (0,014897)	1,0691	0,1242345*** (0,0171363)	1,5959
Population over 65	0,0936039*** (0,016664)	1,2522	0,1093164*** (0,0390539)	1,2053
Ytrade1	1,206227*** (0,1733419)	1,3321	-0,8528535*** (0,2643327)	0,7743
cut_1	-1,521238 (0,4451693)		-3,176199 (0,6547723)	
cut_2	-0,5210504 (0,4444386)		-2,193762 (0,6522227)	
Pseudo R2	0,0814		0,1105	
Prob>chi2	0,0000		0,0000	
Number of observations	3487		1909	
Robust standard errors in brackets				
*** significant at 1%; ** significant at 5%; * significant at 10%				

(1)When we include this variable, Ytrade1 drops due to collinearity. We do not include it in this analysis.

Table 7. Ordinal Logit with Interaction of GDP per capita*Trade

Trade Openness and Preferences for Redistribution. Interactions		
	Dependent Variable: Govredist3	
Independent Variable	Model 2 with interaction GDP*Trade	
	Coefficient	e^bStdX
Gender	0,1653285** (0,0800477)	1,0861
Age	-0,0050893* (0,0029044)	0,9293
Married	-0,0787813 (0,0817263)	0,9631
Educyrs	-0,0651998*** (0,0158371)	0,8115
Ideology	-0,3989888*** (0,044003)	0,6928
Unemployed	-0,30292 (0,2044986)	0,9481
Self-employed	-0,2599565 (0,2190967)	0,9570
Publservant	0,4550523*** (0,0996355)	1,548
Manufocc	0,0680085 (0,0967033)	1,0326
Subjclass	-0,168534*** (0,0382329)	0,8228
Family Income	-0,3449438*** (0,0748324)	0,8412
Tunion	0,2215689** (0,0947834)	1,1045
Rural	0,1776906** (0,0864894)	1,0850
Manuf	0,1608741*** (0,0173669)	2,0493
Unemrate	0,0598342*** (0,0168737)	1,1984
People over 65	0,043911* (0,0254404)	1,1001
<i>Ytrade1</i>	-0,9857799*** (0,2577656)	0,7416
<i>Logdum</i>	-1,306777*** (0,2644402)	0,5212
<i>Tgdp</i>	3,854444*** (0,5125198)	2,6096
cut_1	-0,6849678 (0,5614361)	
cut_2	0,2869966 (0,5615309)	
Pseudo R2	0,1005	
Prob>chi2	0,0000	
Number of observations	3164	
Robust standard errors in brackets		
*** significant at 1%; ** significant at 5%; * significant at 10%		
(1) This variable drops due to collinearity.		

In Table 7 we have results of the first regression with interaction. **Logdum** is the dummy variable for GDP per capita. We have made an interaction of this dummy with **Ytrade1**, which we call **Tgdp**. We introduce these two variables in the original Model 2. We observe that trade has a negative effect to demands for redistribution in poor countries (odds of **Ytrade**: 0,7416); GDP also has a negative effect (odds of **Logdum**= 0,5). However, these demands increase considerably along with the increase in trade openness in wealthy countries (odds of **Tgdp**= 2,6). The R2 of the regression remains approximately at the same level as the initial one.

In table 8 we have made the same type of interaction with manufacturing sector sizes. **Manufdum** is the manufacturing dummy. We have made an interaction of this dummy with **Ytrade1**, which we call **Tmanuf**. We introduce them in the original model. Again, results are sticking and consistent with the observed results in the sub-samples analysis: **Manufdum** has a negative effect on **Govredist3** (odds: 0,13), as well as **Ytrade1** (odds: 0,81) –trade openness has a negative effect on pro-redistribution preferences in low manufacturing countries-; in contrast, **Tmanuf** has a large positive effect, meaning that these preferences increase along with the increase in trade in high-manufacturing countries (all this happens controlling by all other macro-covariates, including GDP per capita).

From these two regressions, we derive some post-estimations. We look at the predicted probability of value 3 (pro-redistribution preferences) in **Govredist3** scale, and in how this varies depending on i) level of trade openness; ii) level of GDP per capita; iii) size of the manufacturing sector. We do it by fixing the values of the independent variables at the level we want; and since we want to observe the predicted values of the *median* voter of the countries, we locate all individual variables at their median level⁴⁹.

In Figures 11 and 12 we observe the evolution of the predicted values along the **Ytrade1** scale for individuals living in Poor and Rich countries. At the same time, we distinguish between individuals living in countries with maximum levels of manufacturing (**manuf**=max) and individuals living in countries with minimum levels of manufacturing (**manuf**=min). Results are very illustrative of what we found in the previous regressions.

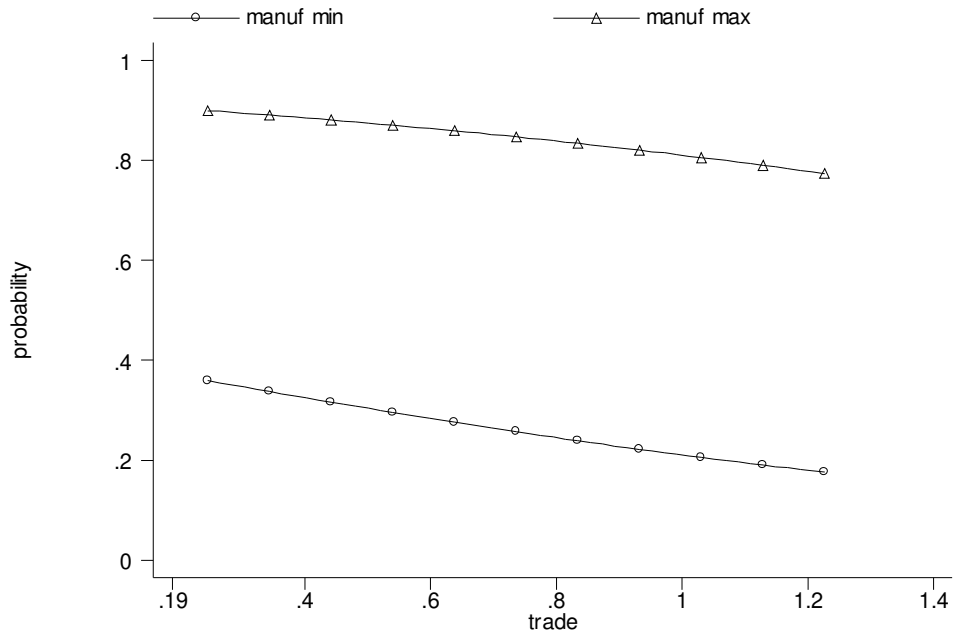
⁴⁹ However, we have made different versions of the post-estimations, with variations in these variables, and we have not found big changes (i.e. if we fix all individual variables at the mean of the sample).

Table 8. Ordinal Logit with Interaction of Manuf*Trade

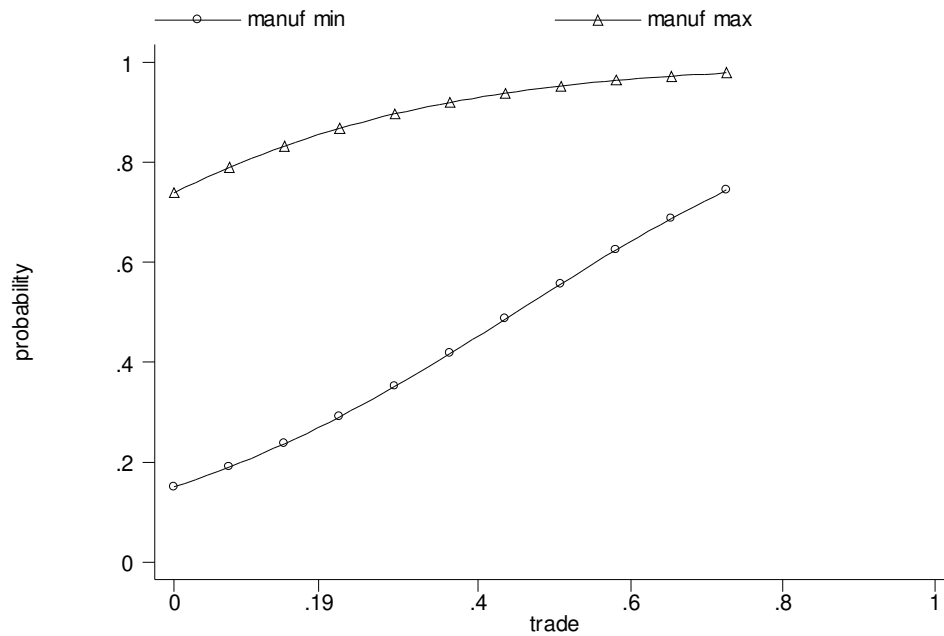
Trade Openness and Preferences for Redistribution. Interactions		
	Dependent Variable: Govredist3	
Independent Variable	Model 2 with interaction Manuf*Trade	
	Coefficient	e^bStdX
Gender	0,1339988* (0,0800119)	1,0693
Age	-0,0060333** (0,0028705)	0,9168
Married	-0,0874018 (0,0813368)	0,9591
Educyrs	-0,0718127*** (0,0156229)	0,7945
Ideology	-0,4723915*** (0,0447657)	0,6476
Unemployed	-0,2371867 (0,2066897)	0,9592
Self-employed	-0,4650866** (0,2197275)	0,9244
Publservant	0,5285063** (0,0967975)	1,3016
Manufocc	0,0841941 (0,0970394)	1,0406
Subjclass	-0,1618098*** (0,0382559)	0,8292
Family Income	-0,3295874*** (0,0757228)	0,8477
Tunion	0,1671714* (0,095758)	1,0779
Rural	0,2393035*** (0,0869016)	1,1161
Log GDP capita	0,0854031 (0,1577136)	1,0973
Unemrate	0,1400287*** (0,0273419)	1,5274
People over 65	0,1045926** (0,0485274)	1,2553
<i>Manufdum</i>	-4,139785*** (0,9131529)	0,1319
<i>Ytrade1</i>	-0,6788951 (0,4136799)	0,8140
<i>Tmanuf</i>	5,565589*** (0,1064948)	1,12309
cut_1	-1,554394 (1,401065)	
cut_2	-0,581732 (1,399953)	
Pseudo R2	0,1030	
Prob>chi2	0,0000	
Number of observations	3164	
Robust standard errors in brackets *** significant at 1%; ** significant at 5%; * significant at 10%		

(1) This variable drops due to collinearity.

**Figure 11. Predicted probability of category 3 for “Poor” countries (for Median voter).
By trade and size of manufacturing sector.**



**Figure 12. Predicted probability of category 3 for “Rich countries” (for Median voter).
By trade and size of manufacturing sector.**



In Poor countries, predicted probability of 3 (pro-redistribution value) decreases with an increase in trade openness. This happens for both High and Low manufacturing countries. However, values are higher for the former countries: redistribution demands are bigger for manufacturing countries in all levels of trade. This is, even if trade may decrease inequality in countries that are both Poor and High manufacturing, we can imagine that it does not in a very important way, for it brings a very slight decrease in redistribution demands.

In Rich countries, as expected, the relationship between trade and predicted pro-redistribution preferences is positive. And it is higher in High manufacturing countries than in Low ones. This is consistent with our hypotheses. Although the increase in trade brings a larger increase in pro-redistribution preferences in the latter case (observe that the curve is convex, while is concave in the former case), it never reaches the former level. Not even in the highest levels of openness.

In Figures 13 and 14 we observe the evolution of the predicted values along the **Ytrade1** scale for individuals living in High and Low manufacturing countries. At the same time, we distinguish between individuals in wealthy countries (**Log GDP per capita=max**) and individuals in poor countries (**Log GDP per capita=min**).

Figure 13. Predicted probability of category 3 for “Low manufacturing countries” (for Median voter). By trade and GDP per capita.

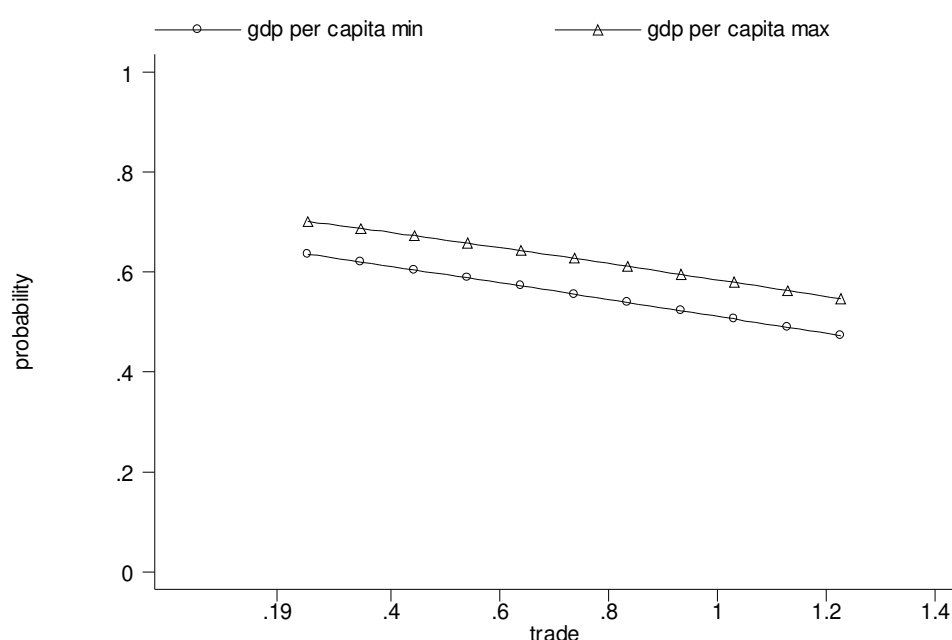
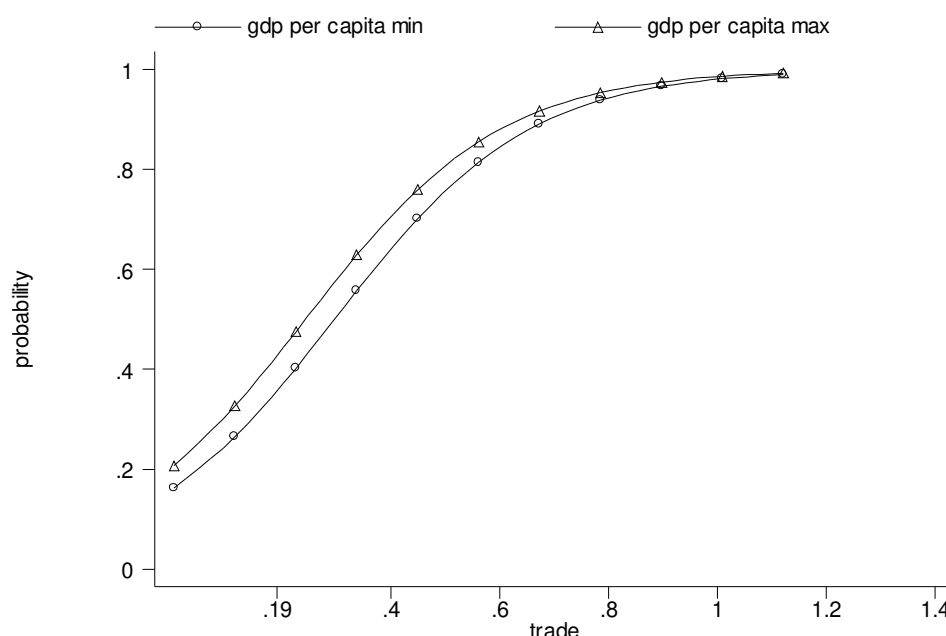


Figure 14. Predicted probability of category 3 for “High manufacturing countries” (for Median voter). By trade and GDP per capita.



Again, the two figures show opposite results. The curves are negative in Low manufacturing countries (where trade does not hypothetically imply an increase in inequality), and they are positive in High manufacturing ones (where it does imply an increase in inequality). In the former case, the demands are higher in richer countries than in poorer ones along all levels of openness. In the latter case, though, demands start being higher in rich countries, but they reach approximately the same level than poor countries in high levels of openness. In another words, redistribution demands of poor countries increase in such a large extent along with the increase in trade openness, that they reach the level of rich countries.

This last finding indicates that the size of the manufacturing sector is a crucial mediating variable. We conjecture that *this variable is even more important than GDP in mediating the effect of trade*. Indeed, this would explain why in large levels of trade openness, no matter if countries are Rich or Poor: if they are High manufacturing countries, their median voters will present very similar levels of pro-redistribution demands.

We can test this conjecture with a more complex interactive regression. In Table 9 there are the results of an ordinal logit with Model 2 including the two interactions simultaneously. This is, we include both $Ytrade1 * Logdum$ (**Tgdp**) and $Ytrade1 * Manufdum$ (**Tmanuf**) of the previous

regressions⁵⁰. **Ytrade1** coefficient expresses the effect of trade (on **Govredist3**) in low-manufacturing and poor countries; this effect has to be added to the coefficients of **Manufdum** and **Logdum**. All these variables have negative coefficients—so, in the direction of what observed before, redistribution demands issued from trade are negative in these type-of-countries-. What interests us more are, however, the coefficients of **Tmanuf** and **Tgdp**. **Tmanuf** expresses the differentiated effect of trade on redistribution preferences once we pass from a Low manufacturing country to a High manufacturing one (this is, the increase in the odds of **Govredist3** with an increase in **Ytrade1** and **Manufdum** altogether); **Tgdp** expresses this same kind of effect, but for GDP per capita (increase in the odds of **Govredist3** along with an increase of **Ytrade1** and **Logdum** altogether). Both interactions have positive and significant coefficients, as they had in the previous regressions. This is, trade has a positive effect on redistribution demands both in high manufacturing countries and/or in rich countries.

Interestingly, in this table we can observe in a *comparative* way the interactive effects of openness and manufactures, and openness and wealth. We just have to compare the odds of these two interactions. These have values 26,14 for **Tmanuf**, and 1,85 for **Tgdp**. Thus, correspondingly with the results of the post-estimation graph in Figure 14, the interactive effect of the size of the manufacturing sector appears as largely more important than the interactive effect of GDP per capita.

The results of this last analysis are decisive, from our point of view. Not only they indicate in a single regression that both **Log GDP per capita** and **Manuf** have an important interactive effect in the relationship between trade and redistribution, but it tell us that the magnitude of this effect is bigger for **Manuf** than for **GDP**. *In other words, we can not only say that both H-O related hypothesis and R-V related hypothesis are corroborated, but that R-V hypothesis (H2) arises as a stronger one.* The size of the potential loser sector in a country determines trade-related redistribution preferences in a larger extent than type of factor endowment of a country⁵¹.

⁵⁰ We also include **Gdpmanuf**, which is an interaction of **Manufdum*Logdum**, in order to make the model complete. This interaction drops due to collinearity in the estimation process.

⁵¹ We could not predict this finding with a preliminary insight to our data probably because we do not have enough variance in the **Manuf** variable, and therefore it was impossible to detect without a statistical treatment of the data.

Table 9. Ordinal Logit with Interactions of GDP*Trade and Manuf*Trade

Trade Openness and Preferences for Redistribution. Interactions		
	Dependent Variable: Govredist3	
Independent Variable	Model 2 with interactions of GDP*Trade and Manuf*Trade	
	Coefficient	e^bStdX
Gender	0,1476699* (0,0806526)	1,0766
Age	-0,0039093 (0,002892)	0,9453
Married	-0,1140912 (0,0814133)	0,9469
Educyrs	-0,0603038*** (0,0157064)	0,8244
Ideology	-0,4513398*** (0,045076)	0,6602
Unemployed	-0,209722 (0,2059191)	0,9638
Self-employed	-0,2957173 (0,2219365)	0,9513
Publservant	0,4394058*** (0,099826)	1,2450
Manufocc	0,0869295 (0,0969421)	1,0419
Subjclass	-0,1986455 (0,0391823)	0,7946
Family Income	-0,3294113*** (0,0754234)	0,8478
Tunion	0,1269756 (0,0962301)	1,0586
Rural	0,1985672** (0,0868067)	1,0954
Unemrate	0,124359*** (0,020539)	1,4567
People over 65	0,1337287*** (0,0267585)	1,3373
<i>Ytrade1</i>	-2,260172*** (0,3193223)	0,5040
<i>Manufdum</i>	-5,934092*** (0,6245516)	0,0548
<i>Logdum</i>	-1,853751*** (0,3322289)	0,3968
<i>Tmanuf</i>	7,509819*** (0,7180705)	26,1430
<i>Tgdp</i>	2,47589*** (0,4221614)	1,8518
<i>Manufgdp (1)</i>	-	-
cut_1	-3,435398 (0,498245)	
cut_2	-2,450747 (0,4967774)	
Pseudo R2	0,1096	
Prob>chi2	0,0000	
Number of observations	3164	
Robust standard errors in brackets *** significant at 1%; ** significant at 5%; * significant at 10%		

(1) This variable drops due to collinearity.

In general, results obtained in this section permit us to corroborate hypotheses H1 and H2. In a first macro-level analysis, we have been able to see that trade has differentiated effects in redistribution demands of the median voter depending on the two mediating variables we have considered: wealth and size of the potential loser sector (manufacturing). Once we have gained statistical efficiency (while working with individual data) we have observed that these differentiated effects reach quite such high levels that they even take opposite signs. Thus, all the issue of compensation it is not only a matter of how trade affects pro-redistribution demands (and, consequently policies), but of how trade can bring either anti or pro-redistribution demands. We think that this is striking evidence against the compensation hypothesis. On the other hand, we have been able to test which of the two mediating effects is higher, in relative terms, and we have concluded that is the size of the loser sector one. This goes in favour of the Ricardo-Viner (R-V) framework of analysis of international trade.

3.5. Test of Hypotheses 3 and 4

In this section, we make two different analyses we in order to test *H3* and *H4*. First, in order to test the hypothesis that type of skills determine the redistribution demands of individuals depending on the skill-endowment of the economy (*H3*), we construct a new variable: **Level of education**⁵². We construct it with a variable (in the ISSP) of educational attainment. We distinguish between: Primary or Low-skilled individuals (with Primary education or less); Secondary or Middle-skilled individuals (with Secondary education), and Tertiary or High-skilled individuals (with Tertiary education). Then, we run different regressions by sub-samples of individuals depending on their educational level. In Table 10 we can see the coefficients of the variable **Ytrade1** in each of the three sub-sample regressions. We include also standard error of the coefficients, and Pseudo R2 and Number of cases of the whole regressions. The coefficient of **Ytrade1** indicates the extent to which trade openness explains redistribution preferences of this type of individuals: if it is positive, it has a positive influence in pro-redistribution preferences; if negative, the contrary. We can see that, for the whole of countries and individuals, trade explains pro-redistribution preferences of Middle and High-skilled individuals, but not for Low-skilled individuals (the coefficient is not statistically significant).

⁵² We proxy skills of the individual with level of education (following Scheve and Slaughter 2001).

Table 10. Effect of trade on redistribution demands by educational levels of the individuals

Level of education	Coefficient	Std. Error	Pseudo R2	N
Primary	0,636836	0,7544697	0,0576***	489
Secondary	1,391463***	0,311785	0,0926***	1825
Tertiary	1,262023***	0,4790304	0,1281***	966

In Table 10 we have pooled all the individuals of all countries, only distinguishing them by educational levels; however, in this way we cannot obtain very relevant conclusions, because the individuals under consideration are set in countries with different skilled labor endowments. In this sense, Table 11 presents more interesting results: here we have also split the sample taking in consideration GDP per capita of the country⁵³.

Table 11. Effect of trade on redistribution demands by educational levels of the individuals and GDP per capita of the countries

log GDP per capita>9				
Level of education	Coefficient	Std. Error	Pseudo R2	N
Primary	0,7547746	0,4974731	0,0636***	453
Secondary	1,452931***	0,1635	0,0875***	1826
Tertiary	0,4444505**	0,2234	0,1160***	1219
log GDP per capita<9				
Level of education	Coefficient	Std. Error	Pseudo R2	N
Primary	-0,4272204	0,724287	0,0440**	372
Secondary	-1,002995***	0,2670172	0,0682***	1257
Tertiary	-1,473059***	0,3649268	0,0937***	471

We observe that, in Rich countries, openness has a positive effect on pro-redistribution preferences for Middle-skilled and High-skilled people, even if these are smaller for the latter⁵⁴.

⁵³ In this way, we have six different regressions. Three for rich countries, and three for poor countries.

⁵⁴ Obviously, with this we are not saying that, on the whole, Middle-skilled people are more pro-redistribution than other people, we just say that trade has a higher effect on their pro(redistribution) preferences.

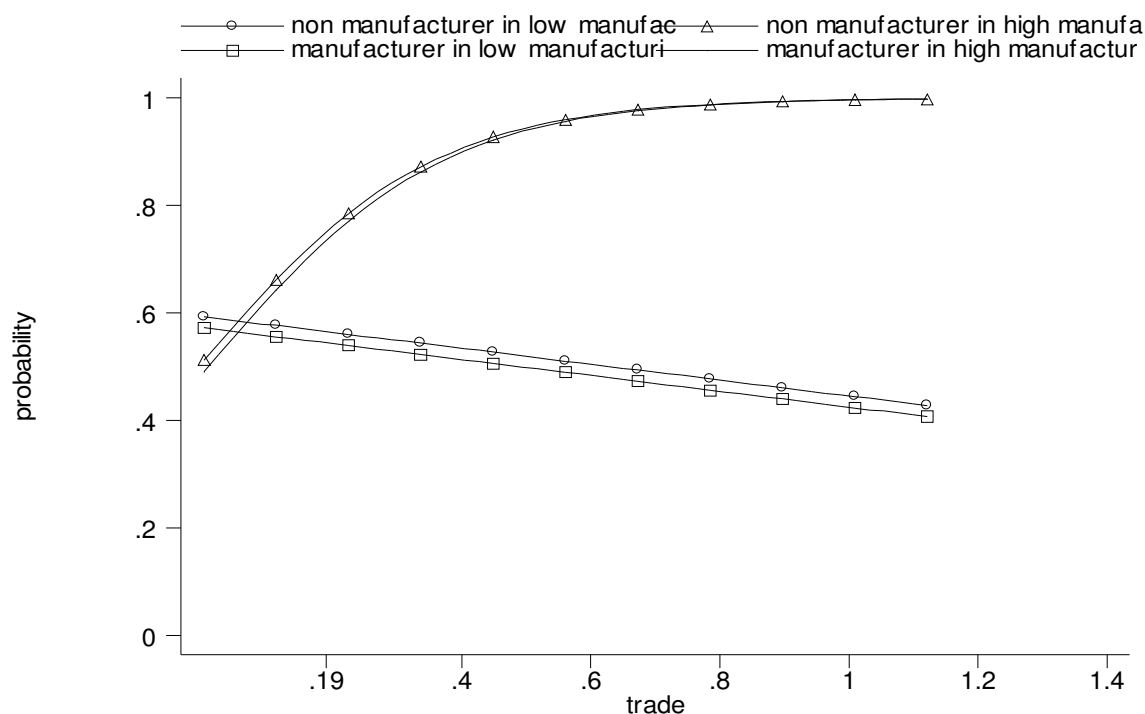
(again, it has no effect for Low-skilled). This is consistent with *H3*, and it is coherent with Scheve and Slaughter (2001) hypothesis that in countries well-endowed with more-skilled labor relative to the rest of the world (this is, countries with a relative higher GDP per capita), more skilled workers benefit from freer trade (therefore, as we argue, present less redistribution demands as a consequence of trade than other workers).

As for “poor” countries, the effect is the contrary. Trade seems to be accompanied by lesser demands for redistribution (and this is consistent with our previous finding, and to the H-O hypothesis). In those countries, those benefited from freer trade are non-skilled workers. However, it is not likely to think that those less benefited from free trade (skilled workers) would be demanding more redistribution as a consequence of openness; redistribution will be probably damaging for high-skilled people, and if they are already damaged by trade, they will be even less likely to favour redistribution. This is why we observe that trade contributes in decreasing pro-redistribution demands of high-skilled in a larger extent than for other citizens.

We have to remark that these data constitute just an indirect measure of the effects that trade openness has in redistribution demands. Anyway, we think that results are interesting, and that they are indirectly supporting our hypothesis on the relevance of type-of-factor endowment of a country for redistribution demands.

Second, our test of *H4*, which is that redistribution preferences will vary between workers of different sectors depending on the sector relevance within the economy, consists on some post-estimation graphs derived from the regression in Table 5 (model 3 with interactions between **Manuf** and **Ytrade1**). Even if **Manufocc** is not statistically significant in the regression, we test whether it has differentiated effects depending on the size of manufacturing sector (no matter the level of wealth of the country). In Figure 14 we observe predicted probabilities for category 3 (pro-redistribution preferences)) for two type of individuals, manufacturer and non-manufacturer, either in High or in Low manufacturing countries. We observe that occupation sector does not play any role in determining individual preferences for redistribution, and that is mostly general sector endowment of the economy what determines them. Therefore, we can reject *H4*.

Figure 15. Predicted probability of category 3 by trade. For “High manufacturing countries” and “Low Manufacturing countries”, and for “Manufacturers” and “Non-Manufacturers”.



Indeed, no differences exist practically between manufacturers and non-manufacturers in high-manufacturing countries. And the same happens with low-manufacturing countries. Further, the curves are practically equal, and they are equivalent to *median* voter curves we could observe in Figures 13 and 14.

Results in this section permit us to accept H3 and to reject H4. We have found evidence showing that skills of the individual determine her redistribution demands issued from trade, and that they do it differently depending on the factor endowment of the economy. We argue that is due to the factor type income considerations of the individuals. On the other hand, we have not found evidence that industry of employment plays a role in explaining redistribution demands issued from trade. Manufacturers present the same level of redistribution demands than non-manufacturers; these demands are much more determined by wealth and sector composition of the economy than for oneself industry of work. This goes against the idea that industry (income) determines these preferences.

4. Discussion

In this paper we have been able to establish a link which has been left empty by most of the literature on trade policy: it is the relationship between trade openness (and its distribution effects) on redistribution preferences of individuals of a country. The next step would be to link these redistribution preferences with government growth; this is, looking at to what extent the existence of higher or lower redistribution demands brings higher or lower levels of public spending (government growth). However, we think that taking as a benchmark the median voter theorem, this remains pretty solved here⁵⁵.

From our empirical analysis, we have obtained evidence showing that trade is a variable explaining redistribution preferences of the individuals. We have been able to see that it has a positive effect in explaining both values for redistribution of the hypothetical median voter in different countries, and values for redistribution of single individuals in these countries. Even if trade appears as having a positive effect when we consider all countries in general, it appears not to be like this once we distinguish by levels of wealth and size of potential loser sectors such as manufacturing. From this, we can conclude that, as had been stated by Fernández-Albertos (2002), these two variables are mediating the effect of trade on redistribution demands. Indeed, we have provided additional evidence showing that this effect is far from being equal to all countries, as has been assumed by most theories linked to compensation hypothesis.

We recognize that our empirical analysis can be seen as problematic in some aspects: on the one hand, we have low statistical efficiency when we consider countries' values; on the other, we are not employing the most sophisticated technique for the two-level test. We think that a next step of our research would be replicating the analysis with more sophisticated statistical tools. In any case, we also consider that we have provided a quite consistent and methodologically coherent empirical test, going from the macro level to the micro level, and employing different measures and models to maximize robustness. Further, results of the two tests are coherent (they show partially differentiated evidence only due to the efficiency problems in the country-level analysis). Thus, we think that our results ought to be considered solid.

⁵⁵ Obviously, we could also analyze the extent to which redistribution demands explain government growth, but this would be part of another type of research project.

Furthermore, despite being empirically risky, our type of analysis has permitted to obtain some insights otherwise ignored in the literature on the trade policy. For instance, we have provided some elements of interest for the debate between the R-V and H-O visions of international trade (and internationalized world). Since our two main hypotheses were related to these two frameworks, we could obtain evidence in favour of one or the other. We have somewhat shown that we are living in a mix of these two worlds (for both hypotheses are corroborated). But, more interestingly, our analysis has allowed testing the weight of each of these hypotheses; in other words, which of the two frameworks has a higher interactive incidence on the effect of trade on redistribution demands. Strikingly, we have seen that R-V “weights” more than H-O. This finding goes against the idea that the R-V argument explains redistribution programs in a lesser extent than the H-O argument, because the former can be linked to non-redistributive compensation, as has been stated by Fernández-Albertos (2002). Our evidence shows that, at least as far as redistribution demands are concerned, this is exactly the opposite. Obviously, we are conscious that ours is an indirect measure of the weight of each of these frameworks, but we consider it non-negligible.

On the other hand, we have obtained some interesting evidence on the determinants of redistribution preferences, which we have linked both to the determinants of preferences on free trade and, again, to the H-O framework vis-à-vis R-V framework debate. We have observed that there are differences in redistribution demands issued from trade between skilled and non-skilled workers, but not differences between workers of different industrial sectors⁵⁶. These results are in favour of the H-O, and against R-V framework.

In general, we consider that we have made a contribution to the literature on trade policy by making the analysis from the viewpoint of redistribution preferences, especially in order to acquire insights that would have been hardly obtainable from an aggregate viewpoint. Our analysis has been limited by the sample of countries for which we had data; we think that it would be interesting to expand it to other areas in the future (i.e. Latin America, Africa, Asia). Results would probably be much more insightful of the differentiated effect of openness in different type-of-countries⁵⁷.

⁵⁶ We could only regard differences between manufacturers and non-manufacturers, but we think that it could be interesting to make further analyses in this direction (i.e. looking by more sectors).

⁵⁷ Since we have median voter theorem as a benchmark, we could only deal with democracies, but still it would be a good thing to do.

Finally, we consider that this paper has presented solid evidence against the pure compensation hypothesis. We consider that this hypothesis needs to be revisited, especially in order to make the appropriate considerations of the different effects that trade openness (and internationalization) can have to different countries and societies. Doubtless, this would enrich the debate on the issue. We think that this would be interesting to both those who consider globalization as an exogenous fact affecting states, and those who consider it as an endogenous phenomenon derived from domestic emanating policies. Indeed, we think that results presented here should be equally valuable for both perspectives of analysis⁵⁸.

5. Conclusions

In this paper, we have intended to make a contribution to the literature on trade policy and trade internationalization. We have called into question the compensation hypothesis -widely accepted so far-, which relates trade openness to public sector growth. We have mainly called into question the idea that redistribution demands of the citizenry are always positively related to openness (and equally related to openness across countries). We have done this by considering the hypothesis that domestic economic characteristics condition the effect that trade is having on the distribution of income. This is, that trade will have different distributional effects, and will bring different redistribution demands, depending on a country's factor endowment and its sector composition.

We have tested our hypothesis with individual data on preferences for redistribution (being this an appropriate proxy for redistribution demands). With an extended empirical analysis, we have been able to observe how domestic characteristics are affecting the relationship between trade and preferences for redistribution. Trade openness has a positive effect on redistribution when it increases inequality, this is, in the case of countries abundant in high-income factors ("rich" countries), or of countries where the sector that is losing with openness (such as the manufacturing one) is relatively big. The contrary happens when trade provokes a decrease in inequality: then, redistribution demands

⁵⁸ Here we have not taken a position in this debate, because we did not consider it necessary. We have taken trade openness as a somewhat exogenous fact for the individuals (we had no need to ask whether it emanates from domestic emanating political decisions, or it is a consequence of the exogenous forces of internationalization).

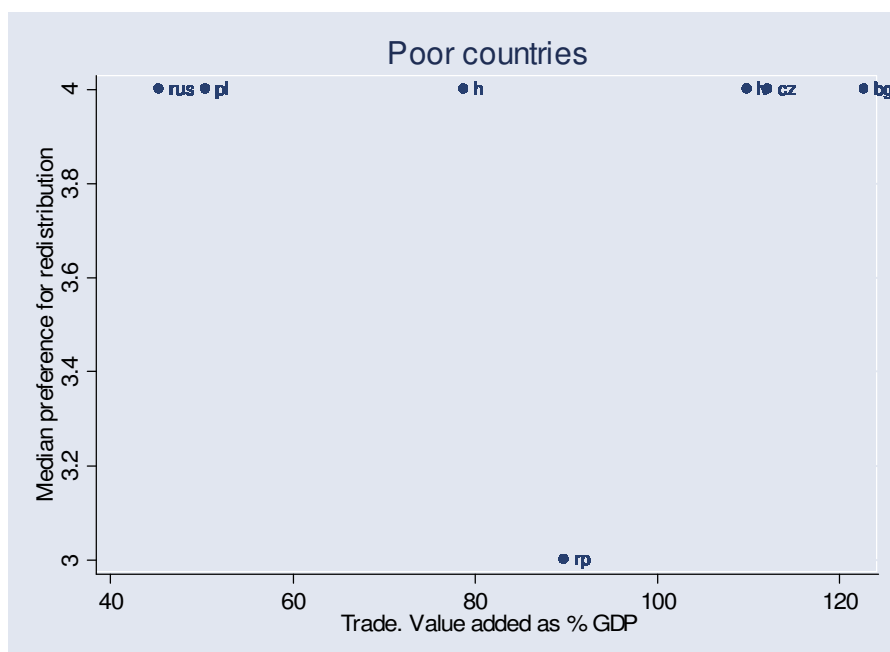
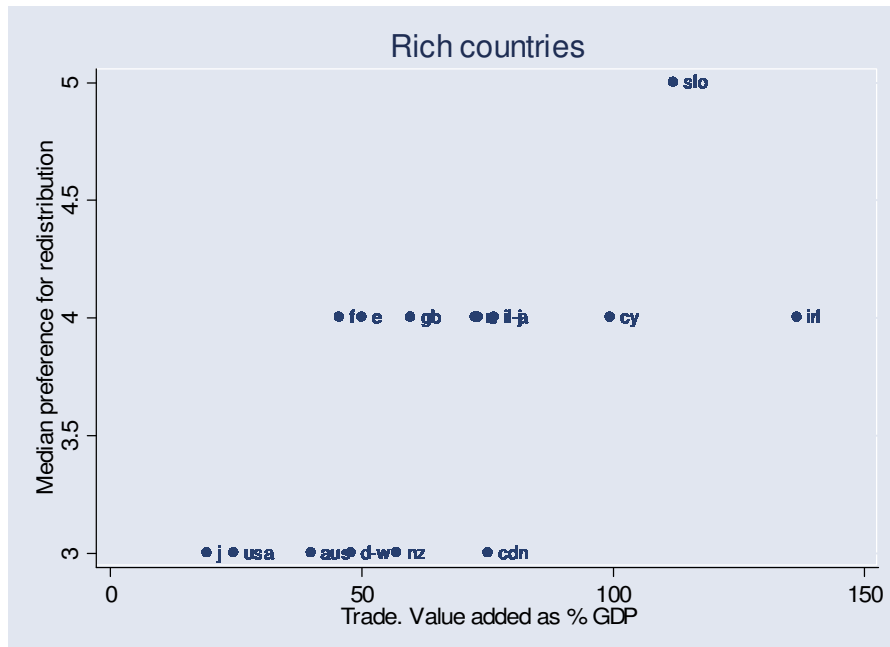
decrease. This happens for countries less abundant in high-income factors (“poor” countries), or in countries where the trade loser sector is relatively small.

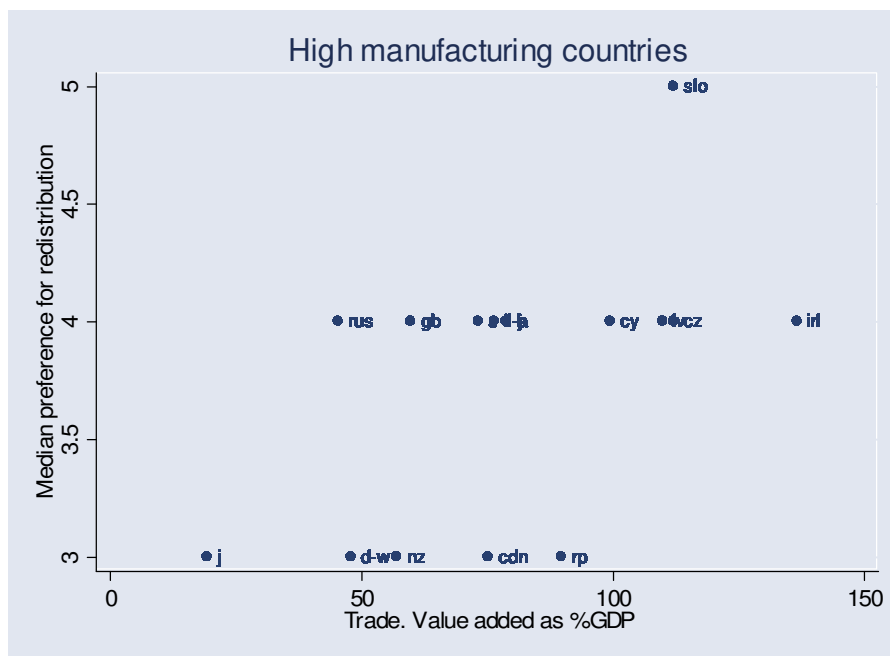
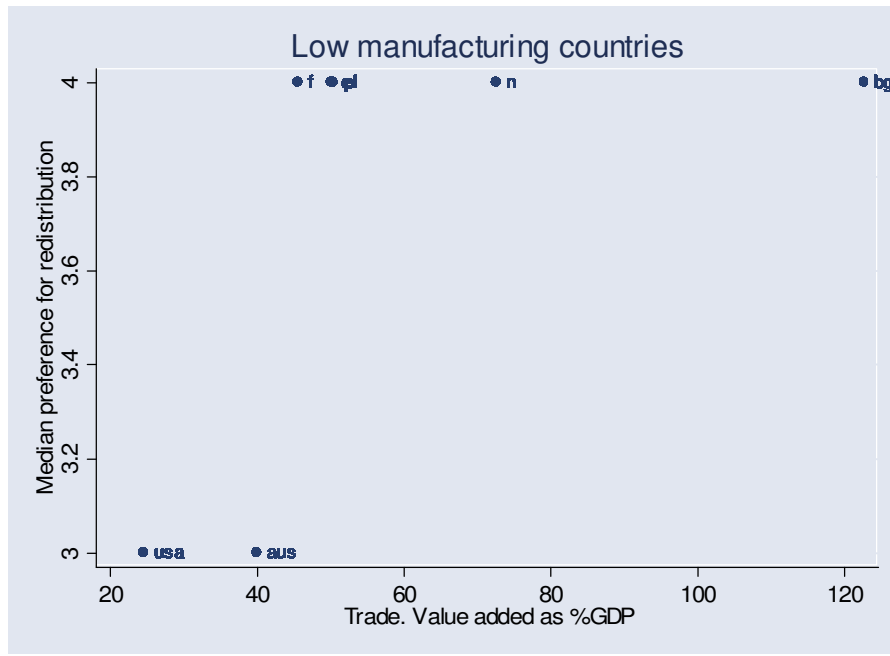
On the other hand, as far as preferences of particular individuals are concerned, we have been able to observe that they are largely conditioned by their factor type income (i.e. their level of skills), relatively to the factor type endowment of the economy. Industry of employment has showed to be insignificant for the redistribution demands of the individuals, relatively to the size of the industrial sector within the country.

Finally, our evidence has been supportive of both the H-O and the R-V frameworks of analysis of international trade. The former has been slightly more supported by the finding that factor type income conditions redistribution preferences of particular individuals (while industry of employment does not). However, the latter has been quite more supported by the finding that size of the loser sector in the economy has a stronger mediating effect (in the relationship between trade and redistribution demands) than type-of-factor endowment of the economy.

APPENDIX

Additional Graphs; with Median Value (Section 2.3- Preliminary Empirical Evidence)





Independent Variables: descriptives and Sources

Individual level variables

Variable	Obs	Mean	Std. Dev.	Min	Max	Explanation
Gender	30497	0,5142145	0,4998061	0	1	Dichotomous: Female=0, Male=1
Age	30380	44,85477	1,686391	15	97	Continuous
Married	30582	0,568112	0,4953471	0	1	Dichotomous: Married=1, Otherwise=0
Educyrs	26368	1,163016	3,340247	1	20	Continuous; we have truncated at 20.
Ideology	16442	2,949824	0,9752613	1	5	Scale: From Extreme Left (1) to Extreme Right (5)
Unemployed	30162	0,0593462	0,2362754	0	1	Dichotomous: Unemployed=1, Otherwise=0
Self-employed	20594	0,1691755	0,3749159	0	1	Dichotomous: Self-Employed=1, Otherwise=0
Publservant	17195	0,4194824	0,4934887	0	1	Dichotomous: Public Servant=1, Otherwise=0
Manufocc	30582	0,2092734	0,4067966	0	1	Dichotomous: Employed in manufacturing sector=1, Otherwise=0
Subclass	26172	3,100298	1,173461	1	6	Scale: from Lower Class (1) to Upper Class (6)
Family Income	29039	2,202624	0,5670717	1	3	Categorical: we recoded the original continuous variable by giving value 1 to those located one standard deviation below the mean of the sample (of each country), 3 to those located above a standard deviation above the mean of the sample (of each country), and 2 to those between.
Tunion	21538	0,2655307	0,4416256	0	1	Dichotomous: Affiliated in a Trade Union=1, Otherwise=0
Rural	21272	0,2971042	0,4569935	0	1	Dichotomous: Living in a rural community=1; Otherwise=0

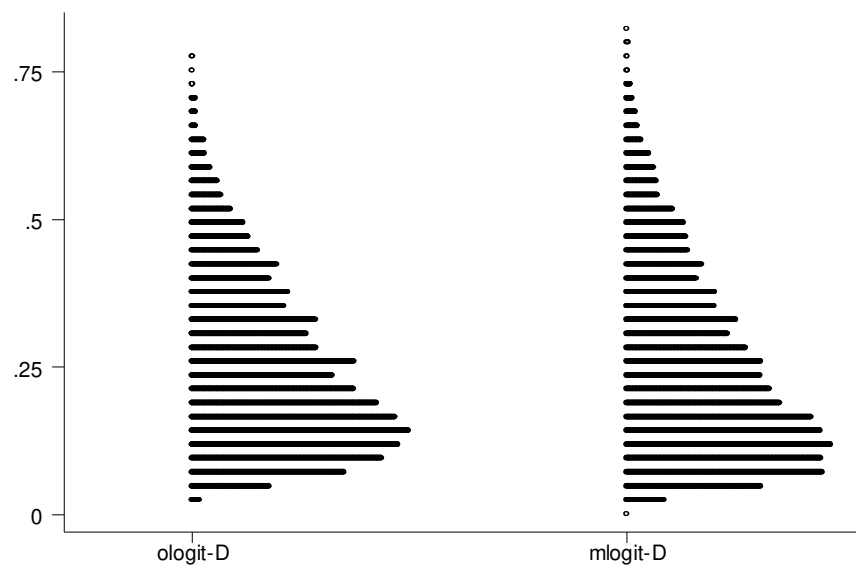
Macro-covariates

Variable	Obs	Mean	Std. Dev.	Min	Max	Source: WB 2000 Development Indicators. Name of variable:
Manuf	20636	19,90218	4,14493	11,12965	28,37329	<i>Manufacturing, value added (% GDP)</i>
Log GDP per capita	30582	9,316709	1,067185	6,995592	10,66563	We have obtained it computing: <i>Log (GDP at market prices (constant 1995 \$) / Population, total)</i>
Unemrate	30582	9,717917	5,017961	3.09	22	<i>Unemployment, total (% of total labor force)</i>
Population over 65	30582	13,39096	2,775901	3,493389	17,31889	<i>Population aged 65 and above (% of total)</i>

Fictitious variables (interactions)

Variable	Obs	Mean	Std. Dev.	Min	Max	Explanation
Manufdum	30582	0,6459355	0,4782367	0	1	Dummy; 0 if Manuf<=19,9 (sample mean); 1 if Manuf>19,9
Logdum	30582	0,666634	0,4714238	0	1	Dummy; 0 if Log GDP capita<=9,3 (sample mean); 1 if Log GDP capita>9,3
Tmanuf	20636	0,3394402	0,4144693	0	1,121132	Continuous; Ytrade1*Manufdum
Tgdp	30582	0,3919957	0,3500082	0	1,366506	Continuous; Ytrade1*Logdum
Gdpmanuf	30582	0,3843437	0,4864477	0	1	Dummy; Manufdum*Logdum

Figure 10- Comparison Ologit and Mlogit predicted values



Measures of Goodness-of-fit for Logit model (Table 8)

Logistic model for Govredistdum (Model 1)

Classified	True		Total
	D	~D	
+	2560	1153	3713
-	598	1085	1683
Total	3158	2238	5396

Classified + if predicted $\Pr(D) \geq .5$
 True D defined as $\text{dum} \neq 0$

Sensitivity	$\Pr(+ D)$	81.06%
Specificity	$\Pr(- \sim D)$	48.48%
Positive predictive value	$\Pr(D +)$	68.95%
Negative predictive value	$\Pr(\sim D -)$	64.47%

False + rate for true ~D	$\Pr(+ \sim D)$	51.52%
False - rate for true D	$\Pr(- D)$	18.94%
False + rate for classified +	$\Pr(\sim D +)$	31.05%
False - rate for classified -	$\Pr(D -)$	35.53%

Correctly classified **67.55%**

Logistic model for Govredistdum (Model 2)

Classified	True		Total
	D	~D	
+	1546	649	2195
-	345	624	969
Total	1891	1273	3164

Classified + if predicted $\Pr(D) \geq .5$
 True D defined as $\text{dum} \neq 0$

Sensitivity	$\Pr(+ D)$	81.76%
Specificity	$\Pr(- \sim D)$	49.02%
Positive predictive value	$\Pr(D +)$	70.43%
Negative predictive value	$\Pr(\sim D -)$	64.40%

False + rate for true ~D	$\Pr(+ \sim D)$	50.98%
False - rate for true D	$\Pr(- D)$	18.24%
False + rate for classified +	$\Pr(\sim D +)$	29.57%
False - rate for classified -	$\Pr(D -)$	35.60%

Correctly classified **68.58%**

Logistic model for Govredistdum (Model 3)

Classified	----- True -----		Total
	D	~D	
+	1554	635	2189
-	337	638	975
Total	1891	1273	3164

Classified + if predicted $\Pr(D) \geq .5$
 True D defined as dum != 0

Sensitivity	$\Pr(+ D)$	82.18%
Specificity	$\Pr(- \sim D)$	50.12%
Positive predictive value	$\Pr(D +)$	70.99%
Negative predictive value	$\Pr(\sim D -)$	65.44%
False + rate for true ~D	$\Pr(+ \sim D)$	49.88%
False - rate for true D	$\Pr(- D)$	17.82%
False + rate for classified +	$\Pr(\sim D +)$	29.01%
False - rate for classified -	$\Pr(D -)$	34.56%
Correctly classified		69.28%

Regression by sub-samples- Correlation coefficients between variables in each of the sub-samples compared to the ones in the whole sample.

	Correlation between independent variables		
	GDP per capita \leq mean	GDP per capita $>$ mean	All
Ytrade*Manuf	0,2379	-0,4169	0,26
	%Manufactures \leq mean	%Manufactures $>$ mean	
Ytrade*LogGDPcap	-0,6589	-0,8075	-0,4655
Manuf*LogGDPcap			-0,2579

References

- Aalberg Toril. "Founding the Welfare State: Comparative Public Opinion on Taxes and Redistribution of Income". Luxembourg Income Study Working Paper Series 180, April 1998.
- Adserà, Alicia and Carles Boix. "Trade, Democracy, and the Size of the Public Sector: The Political Underpinnings of Openness." *International Organization* 56, no. 2 (Spring 2002): 229-62.
- Alesina, Alberto and Eliana La Ferrara. "Preferences for Redistribution in the Land of Opportunities", March 2001. <http://post.economics.harvard.edu/faculty/alesina/papers/landopp1.pdf>
- Alesina, Alberto and George-Marios Angeletos. "Fairness and Redistribution", December 2003. <http://post.economics.harvard.edu/faculty/alesina/papers/fairness.pdf>
- Alt, James E. and Alec Chrystal. *Political Economics*. Berkeley: University of California Press, 1983.
- Bernasconi, Michele. *Preferences for Taxes in Developed Democracies: Evidence From the ISSP*. (Manuscript), 2000.
- Boix, Carles. *Democracy and Redistribution*. Cambridge: Cambridge University Press, 2003.
- Bresser Pereira, Luiz Carlos; José María Maravall y Adam Przeworski. *Las Reformas Económicas en las Nuevas Democracias. Un Enfoque Socialdemócrata*. Madrid: Alianza Editorial, 1995.
- Corneo, G. and H.P. Gruner. "Individual Preferences for Political Redistribution." *Journal of Public Economics* 83 (2002): 83-107.
- Dutt, Pushan and Devashish Mitra. "Endogenous Trade Policy through Majority Voting: An Empirical Investigation." *Journal of International Economics* 58 (2002): 107-33.
- Fernández-Albertos, José. *Making globalization endogenous. The domestic determinants of capital mobility*. Madrid: CEACS Estudio/Working Paper 2002/172, October 2000.
- Fernández-Albertos, José. "Trade Liberalization, Exchange Rate Regimes and Fiscal Policies in Latin America. A Political Account", Paper presented at the ECPR Joint Sessions, Torino, 2002.
- Garret, Geoffrey. *Globalization and Government Spending Around the World*. Madrid: CEACS Estudio/Working Paper 2000/155, October 2000.
- Gourevitch, Peter. "The Second Image Reversed: The International Sources of Domestic Politics." *International Organization* 32, no. 4 (Autumn 1978): 881-912.
- Katzenstein, Peter J. *Small States in World Markets: Industrial Policy in Europe*. Ithaca & London: Cornell University Press, 1985.
- Long, Scott J. *Regression Models for Categorical and Limited Dependent Variables*. Oaks, California: Sage publications, Advanced Quantitative Techniques in the Social Sciences Series, 1997.

- Long, Scott J. and Jeremy Freese. *Regression Models for Categorical Dependent Variables Using Stata*. College Station, Texas: Stata Press, 2001.
- Low, Patrick; Marcelo Olarreaga y Javier Suárez. *Does Globalization Cause a Higher Concentration of International Trade and Investment Flows?* World Trade Organization, Staff Working Paper ERAD-98-08, August 1998.
- Mayda, Anna Maria and Daniel Rodrik. "Why Are Some People (and Countries) More Protectionist Than Others?", January 2002. Department of Economics and JFK School of Government
- Mulé, Rosa. *The Politics of Income Redistribution. Factional Strife and Vote Mobilization under Thatcher*. Florence: EUI Working Papers, EUI 99/10, 1999.
- Neary, Peter J. "The Stolper-Samuelson Theorem". Prepared for *Encyclopedia of World Trade since 1450*, ed. J.J. McCusker et al., New York: Macmillan Reference. February 6, 2004. <http://ucd.ie/~economic/staff/pneary/neary.htm>.
- Rodrik, Dani. "Symposium on Globalization in Perspective: An Introduction" *The Journal of Economic Perspectives* 12, no. 4 (Autumn 1998a): 3-8.
- _____. "Why Do More Open Economies Have Bigger Governments?" *The Journal of Political Economy* 106, no. 5 (October 1998b): 997-1032.
- Rogowski, Ronald. *Commerce and Coalitions. How Trade Affects Domestic Political Alignments*. New Jersey: Princeton University Press, 1989.
- _____. "Political Cleavages and Changing Exposure to Trade." *The American Political Science Review* 81, no. 4 (December 1987): 1121-37.
- Scheve, Kenneth F. and Matthew J. Slaughter. "What Determines Individual Trade-Policy Preferences?" *Journal of International Economics* 54 (2001): 267-92.